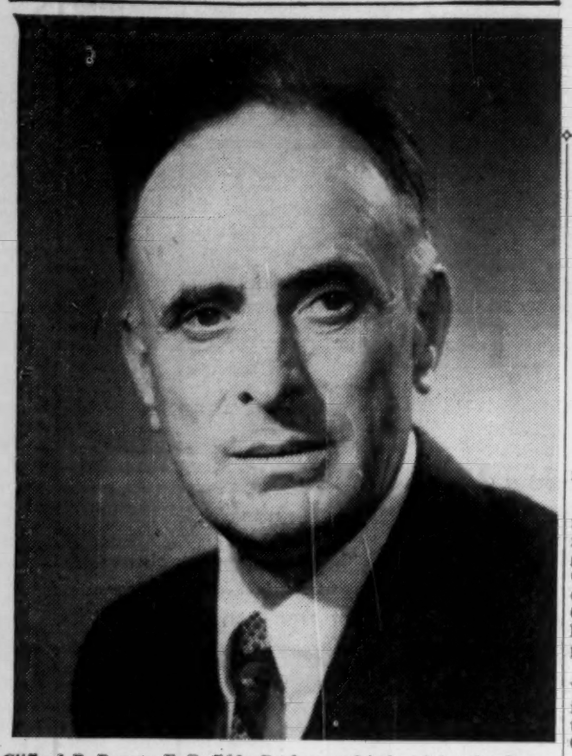
The Financial Post

20 cents

Canada's National Weekly of Business, Investment and Public Affairs.

Vol. L | Member of Audit Bureau of Circulations ★ Publication Office: Toronto, June 23, 1956 ★ Twenty Cents an issue, Six Dollars a Year | No. 25

Heads Chemists



Clifford B. Purves, E. B. Eddy Professor of industrial and cellulose chemistry at McGill University, Montreal, is the new president of the Chemical Institute of Canada. The 11-year-old CIC's 4,000 senior members work to broaden Canada's chemical know-how from coast to coast, representing industry, universities and government departments.

THE NATION'S BUSINESS

Canada Needs More Of This Thinking

At St. Andrew's-by-the-Sea last week, members of the Investment Dealers' Association of Canada were treated to a peek into the future by three industry leaders.

What they were shown had some of the appeal of a Buck Rogers rocket ship adventure story.

Thomas W. Eadie, president of Bell Telephone Co. of Canada, delighted his audience with a magician-like display of vest-pocket radio transmitters, tiny transistors which can amplify 2,500 phone conversations at once, and other wonders of the science of telecommunications.

William J. Bennett, president of Atomic Energy of Canada, talked about reactors and the amount of Canadian uranium they might consume and of the expected $300-million-a-year uranium production which will place this new-age metal first among all metals produced in Canada.

James Coyne, Governor of the Bank of Canada, showed that central bankers don't have to take a back seat to the engineers in their approach to the future. In the year and a half since he was made head of our central bank, he has helped foster the development of two new-to-Canada financial innovations — the short term money market and the participation of the chartered banks in the house mortgage field. Now he is urging the investment dealers to help develop a secondary market for mortgages which will make them as easily marketable as stocks and bonds.

It's a new field for most investment dealers, but as Mr. Coyne points out, there is no group better qualified to distribute the ownership of mortgages widely, and to work out ways of making them quickly transferable without too great a change in value resulting from the activity of any one buyer or seller.

It's refreshing to see such ingenuity and flexibility of thought among leading men in this country. These qualities increase greatly the chances of making the most of our national potential.

In this regard, Canadian industrial firms should lose no time in finding out how they can fit into this new atomic age. Mr. Bennett pointed out that more than 100 Canadian companies have been engaged in the fabrication of parts for the new NRU research reactor at Chalk River.

That's only part of the story. The atom can be put to work in hundreds of ways in industry, in forestry, in farming, and in medicine to improve present methods.

To grasp these opportunities, however, training in atomic science is necessary. Firms working on parts for the Chalk River reactors, for instance, must cope with special designs outside of normal manufacturing experience. The chemists have to deal with new problems in reactors. The metallurgists must develop new alloys to withstand the high temperatures involved.

Industry must start gathering together now a technical staff competent to put the atom to effective use. The universities can train them if the demand is there.

We have an excellent nucleus of know-how at Chalk River, rated among the world's best in many branches of nuclear science. We have vast quantities of uranium. With such a good start in this field, Canada should be able to keep right up with the big countries in the atomic age — if Canadians will realize that the opportunities are here, and the time is now.

* * *

B. C. Electric's Fine Offer

B. C. Electric's announcement of its willingness to build the much-publicized Mica Creek dam, on the upper Columbia River, is a fine example of private enterprise at its public-spirited best. Without waiting for government to clear political obstacles and guarantee profits, business has stepped forward with a firm offer involving a large sum of money.

This is a triumph for Canadian initiative too. The B. C. company is just as capable of foreseeing an immense need of new power as any American concern seeking to attach Canadian resources to its existing U. S. plants.

B. C. Electric may have to borrow much of the necessary money in the U. S. but this is a form of American investment nobody can find fault with.

But there may be one international hurdle to be cleared. The U. S. can't control Canadian damming of the Columbia and could complain only if it lowered water levels on the American side. In this case the levels will be controlled and the Americans can only gain by Canadian action; they stand to gain heavily. The Mica Creek dam could increase the potential of downstream electrical plants, in U. S. territory, by as much as 30%.

If the U. S. is not prepared to take a reasonable view and offer adequate recompense for this gain, recompense in the form of power, Canada can still turn Columbia water into the Fraser. The beauty of the Mica Creek dam is that it's just as necessary for this diversion as for regulating the flow of the Columbia.

Handled in the right way, B. C. Electric's offer will immeasurably strengthen Canada's claim, long in dispute, to full use of the upper Columbia. It shows that a B. C. company is ready to develop the power B. C. needs. General McNaughton and the Federal Government were 100% right in the strong stand they took, in defense of Canadian interests, in the International Joint Commission. And Premier Bennett was talking pernicious nonsense when he argued that any Columbia development had to be a joint Canadian-American proposition.

On a longer view, if B. C. Electric sees now that it will need Mica Creek's capacity of 1¼ million kilowatts in the next 10 years, it isn't fanciful to believe that in 30 years B. C. will be able to use the extra 6 million kilowatts that might be developed by the Fraser diversion.

No deal made now with the U. S. should be allowed to jeopardize this longer-range prospect.

Predict Ottawa Nod For Giant B.C. Dam

Mica Creek Project Decision Up to B.C. Alone; Seers Say Government Will Keep Clear, Upper Columbia Not Part Of U.S. Water Row

For details on B. C.'s mammoth dam project, see page 25.

OTTAWA (Staff) — Announcement of B. C. Power Corp.'s readiness to build Canada's biggest single power project at Mica Creek on the Columbia River came as a surprise to the Federal Government, though it had been known that the big power company wanted to do the job.

The announcement was made in Vancouver by A. E. Grauer, president of the corporation, which is the parent of the B. C. Electric Co. and of the newly formed subsidiary Western Development & Power Ltd., whose main job is to investigate the power possibilities of the Columbia and Fraser rivers.

Immediate reaction here was that the Federal Government would not be directly concerned. In particular:

—It will be for the B. C. Government alone to decide who should be authorized to exploit this or any other of the province's natural resources. Ottawa will be at pains to keep clear of a decision which is solely within provincial jurisdiction.

—Announcement of B. C. Electric's plan will not alter the international problem, which is to be discussed in private negotiations between the Federal Government and the U. S. The whole question of an equitable division of "downstream benefits," and of Canada's right to divert the Columbia River into the Fraser if it sees fit, remains as before, it is believed.

So far as the B. C. Power Corp. is concerned, Ottawa's approval would merely be required, under the International Rivers Act, for the proposed use of the water. This would, of course, be designed to ensure that the proposed works took full account of Canadian needs present and future and didn't alienate power resources which will be needed by future generations of Canadians.

No difficulty would be likely to arise, since the B. C. Power Corp. clearly understands as well as, or better than, anyone else in Canada the tremendous growth in British Columbia's need for power.

The present rate of growth amounts to 15% per annum, which is higher than anywhere else in North America and possibly the highest rate in the world, according to General A. G. L. McNaughton.

At this rate — which seems more likely to increase than decrease — B. C.'s power requirement will double in five years, and double again in 10 years.

The development of the Cana-

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Inside

WHAT DO business chieftains study when they go back to university? The Post's J. B. McGeachy paints a profound and colorful picture of the Queen's seminar ..... p. 7.

CHEMISTRY, the wonder industry, is shaping a new future for Canada, a tomorrow of wealth and improved living. Special report . p. 49-72.

THERE'S a thriving secondary market in residential mortgages for investment dealers, according to the Bank of Canada's Coyne. For details, see Paul S. Deacon's column p. 5.

THIS NEW trading stamp plan may be a path around the law. Furthermore, it may win a sizeable chunk of retail business away from the big food chains. ..... p. 27.

Labor Talks Cheer Western Oil Outlook

By W. L. DACK

The West Coast oil marketing picture was a good deal brighter this week as a result of three separate developments — one on the labor front, another in marketing, the third in international trade.

- End of Anacortes, Wash., oil refinery strike, which to date has cost Canadian producers loss of some 3.5 million bbls. of oil to the export market, moved a long step closer this week.
- Offshore tanker shipments are speeding up. There were four more in May, another so far this month. There'll be four more next month.
- A recent U. S. Office of defense Mobilization announcement that all oil exports going into the U. S. West Coast will be exempted from possibility of

(Continued on page 8, col. 3)

Builders Organize For Credit Battle

Backed By Angry Groups, A Deputation Of Home Builders Will Advance On Ottawa Next Week — Aim: 'Cut Bank Assets, Ease Loans'

By CLIFFORD FOWKE

Canada's house builders are organizing on a national scale to fight the tightening squeeze of credit restrictions on their industry.

Spurred by bitter protests from several local associations, and a flood of wires from other home building organizations in various parts of the country, the National House Builders' Association is sending a deputation to Ottawa next week to meet the Standing Committee on Banking and Commerce in an effort to have loan restrictions eased.

Until now, builders have been carrying on with new housing starts on loans arranged before the Bank of Canada asked chartered banks to build up their cash and liquid assets to 15% of deposit liabilities. Formerly, the banks operated on an 8% basis.

The Reason Why

The builders feel that this buildup of liquid assets by the banks is the real reason why mortgage money — of which the banks provided 51% last year — is so tight.

The impact of the credit restrictions has apparently hit the builders in different parts of the country only in the last few weeks. Until then, most of them had been carrying on with loans arranged before the restrictions were applied.

Now, the builders say, further loans for new housing are being refused or severely curtailed. In a number of major cities, reports are that loan promises made by banks earlier are being withdrawn.

This is forcing builders to cut down their 1956 plans for new homes at a time when the sales market in many areas is still buoyant. It will have the effect, say NHBA leaders, of a sharp decline in housing starts within the next 60 days and probably earlier.

Leaders of the deputation to Ottawa will be Harvey White, Windsor, a director of the national association, and Les Wade, western vice-president. Only item on the agenda is credit restrictions. The deputation will:

- Present specific instances of how loan restrictions are hitting builders in different parts of the country in their summer and fall plans for new homes.
- Ask that the buildup by the banks of 15% cash and liquid assets requested by the Bank of Canada, be reduced by 2% or 3% to free enough money for future mortgage loans.

"Starved of Mortgages"

Harvey White told The Post: "The banks provided 51% of the money needed by the housing industry last year. By cutting down on that, they are striking at half the housing industry, starving the country of a big proportion of the mortgages needed."

He added: "I am receiving reports from all over the country just now. The position is much more serious than realized."

The builders claim they are trying to prevent a serious situa-

(Continued on page 8, col. 2)

THE PACE OF BUSINESS

Plus, Minus Signs As Boom Continues

By MICHAEL BARKWAY

OTTAWA (Staff) — The Canadian economy still looks like being at full stretch throughout this summer, with a new warning of looming labor shortages.

The rate of growth in 1956, revealed in the National Accounts for the first quarter, kept well ahead of the U. S. growth — though Americans contributed much of it both in capital and in goods.

Seasonally adjusted figures show the first quarter's Gross National Product to be about 3% higher than the last quarter of 1955. It was nearly 12% higher than the first quarter of last year.

These comparisons show the estimated value of all goods and services produced in Canada, leaving out the farm sector. Farm estimates for the first quarter are based on past averages only.

Total Gross National Product, including the average estimate for farm production, reached an annual rate of $28.3 billion in the first quarter. In second and third quarters it will go up from there. So we are already far ahead of the forecast on which Finance Minister Harris based his budget in April. He counted on only $28 billion for the full year.

So far, the figures show remarkable stability in the over-all price level. Consumer prices are little changed, thanks partly to some price-paring by business.

But some moderate cautions are seen in these facts:

- The price index for industrial materials keeps edging upward.
- Prices of machinery and equipment, and of non-residential construction, both average some 7 to 8% above a year ago.
- Business inventories grew in the first quarter more than in any quarter since the middle of 1951 — which was the hectic post-Korean period.
- The current deficit on the first quarter's balance of payments amounted to one quarter of Canada's current receipts in the period. This is higher than it has been since 1930. In absolute terms, the current deficit—at $345 million — matches that second quarter of 1951 when inventory accumulation and a splurge on imports were at a postwar peak.

Already by about the middle of May the number of Canadians looking for jobs was down to little higher than the level of June last year. It stood at 165,000, or just 3% of the labor force. Last May it was 213,000, and this dropped to 157,000 in June.

The low figure of this May is the more remarkable in view of the late spring. It will be squeezed just about to rock-bottom before the summer is over.

Main feature of Canada's 1956 prosperity is in the record program of capital investment, nurtured in considerable degree by the inflow of both funds and goods from abroad.

Mining, forestry, construction and service trades led the 1956 expansion. Manufacturing lagged behind, dropping back a little (with allowance made for seasonality) from the last quarter of 1955.

Here are some of the outstanding pointers from the D.B.S. report on the first quarter National Accounts:

Investment Boom:

The huge program of new investment in plant and equipment and buildings which was foreshadowed at the beginning of the year got under way quickly. The first quarter's spending came near to matching the forecast annual

(Continued on page 3 col. 1)

Here's New Aid For Flying Execs: Rented Equipment

Aircraft users are offered wider facilities by a new rent-your-equipment scheme introduced in Canada.

Technical Enterprises Ltd., Malton, Ont., are supplying radio and navigation equipment worth $500 to $50,000 on a 4% monthly rental system. They claim this is the first time such a scheme has been tried in either Canada or the U. S.

Says Vice-president R. B. Nelson: "Many business aircraft are limited in their usefulness by not having full equipment for instrument flight rules, yet the company does not want to add some $20,000 of instruments to the original $40,000-$50,000 for the aircraft."

The rental scheme, with a minimum period of one year, is calculated on a basis of $40 per month per $1,000 of equipment, decreasing over a period of five years to $20 per month. Free service goes with it.

Car Buyers Baffle Experts As Sales Better 1955 Pace

Far from sagging, auto sales this year are heading for a record. For the optimistic details, see Rhys Sale's (of Ford) outlook on '56, p. 26.

By JACK McARTHUR

The gloomsters keep saying "No" but car buyers keep saying "Yes."

And the customer is always right in a hotly competitive field like motor vehicle sales.

That's why continued consumer enthusiasm for new cars is keeping sales above last year's totals, even though U. S. sales have plummeted and most Canadians seem to have the wrong idea that motor vehicles are an economic soft spot.

Despite good demand, the outlook is for more low prices, as makers and dealers continue to concentrate on big volume and low markups.

Experts "Shaky"

Canadian automakers and dealers have been worried by the insistence of many "experts" that this is a shaky sales year.

Ford of Canada President Rhys M. Sale in an Edmonton speech at midweek announced:

—Motor vehicle sales for the first five months are 10% ahead of record-breaking 1955.

—Ford surveys, almost invariably accurate, indicate that Canadians plan to step up their new car buying in the next 18 months. Best of all, the hottest sales area will be the Prairies,

(Continued on page 3, col. 4)

New Car: 99c

One of Canada's big-volume wheel-em-and-deal-em auto sellers came up with a new gimmick in Toronto this week.

Ken Halnan Motors of suburban Long Branch — which sells Dodge and DeSoto with all the razzle-dazzle of a three-ring circus — rented Toronto's Mutual Street Arena for a three-day sales blitz.

It was to be genuine supermarket selling:

—200 "special-purchase" cars were put on display.

—"Savings as much as $1,114 per car."

—Customers wander through the arena, pick out a car they like, confer with a salesman, drive the car away. No additional accessories, no test drive (but fully guaranteed). "No hidden charges, no high pressure."

—Trade-ins to be disposed of on the spot to used car dealers invited to be present (Halnan auctions most of its used cars to dealers).

—The dealer advertised that some one during the three-day push would be chosen to buy a 1956 Dodge for 99c.

Better Do Your Hiring Now —Labor Shortage Shaping

OTTAWA (Staff) — A labor shortage during the next several weeks appears to be in the making.

That means employment opportunities will be better than they've been in years.

As the year's peak employment period draws near, the number of Canadians without jobs is far smaller than in 1955, our busiest year so far.

Throughout Canada, only 165,000 persons were unemployed and seeking work at May 19, according to a government survey completed this week. That figure represents 2.9% of the civilian labor force of 5,664,000.

A year earlier, 213,000 persons, or 3.9% of the 5,537,000-man labor force, were without jobs and seeking work.

The 5,499,000 people with jobs at May 19 were 173,000 greater than a month earlier, 175,000 more than in May, 1955.

If it were not for the odd employment soft spot, where men are out of work, the nation's hot pace of economic growth might

(Continued on page 3, col. 5)

Charge Ottawa 'Gypping' Workers In Profit Plans

By DALTON ROBERTSON

Companies which operate profit sharing schemes feel their employees have been short changed by new legislation introduced in Ottawa.

They had looked to this year's amendments to the Income Tax Act for relief from what they consider an unfair bite. But right now they contend the proposed amendments don't go as far as they had been led to expect in the federal budget brought down earlier this year.

As a result, although the tax bill has had a first reading, members of the Council of the Profit Sharing Industries are making new representations to the Minister of Finance in the hope that a slip has been made and broader exemptions will be offered before the bill becomes law.

It's not the company tax position that is hit. It's the employee's tax burden that is considered unfair.

The profit-sharing employer pays to all employees, in addition to regular pay, a special current or deferred sum based on the prosperity of the business. Under existing regulations, when allocating this contribution either contingently or absolutely, the employer can claim it as a deduction from corporate income tax. But the employee must pay income tax on that amount in the year in which it is allocated — even though he may never receive it.

Quite often a profit sharing scheme provides that the employer's contributions cannot be touched by the employee until retirement or until a stipulated number of years have passed. This means that when an employee leaves before he is eligible to collect, he has paid income tax on income he will never see.

Short End of Deal

Under the proposed amendments the employee who leaves and is no longer a beneficiary under a plan from which he has received no payment, is eligible for a tax refund "equal to 15% of the amount so allocated to him during his membership in the plan."

This, say the profit sharing industries, doesn't go far enough. Since 15% is a minimal tax assessment, chances are most participants in a profit sharing plan will still come out on the short end of the deal.

Hopes had been high when the

(Continued on page 11, col. 5)

THE SIGNS AND PORTENTS

COUNT ON fewer strikes or other labor tie-ups this summer. Contract settlement patterns, all involving wage hikes, have been set for the important automobile, construction, railway, textile and pulp and paper industries. With current demand backlogs, companies will risk raises to keep production moving. Big question mark: Steel, where pace-setting talks in the U. S. may show results by early July.

* * *

CANCER CURE isn't to be expected overnight from research now going on with special cancer "serum." Medical researchers say results are still very inconclusive with no evidence so far that the serum can cure; they are doubtful about the extent to which the serum arrests the disease. It will be one or two years at least before more definite findings are available.

* * *

WATCH FOR a step up in Red propaganda during the next few months. Reason: Publication of "National Economy of the USSR." This first Russian statistical yearbook since 1939 will give hungry party liners new ammunition for argument. The figures, far scantier than those in handbooks of the '20s and '30s, are chosen mainly for propaganda use.

* * *

A QUOTE WORTH noting: "The multimillion-dollar do-it-yourself boom was responsible last year for 600,000 accidents. About 15,000 amateur carpenters smashed their thumbs or otherwise did themselves in, and 57,000 people banged themselves up climbing around the gutters and troughs of roofs . . . The cost of doing it yourself . . . has risen so much that many people can no longer afford to do it themselves." —Russell Lynes, managing editor, Harper's Magazine.

* * *

DO-IT-YOURSELF, despite its difficulties, is due for a big push by heavy appliance makers. Aiming at getting past a vexing distribution barrier, several major firms are working on kits to go with package kitchen, air conditioning and other household units providing tools and installation instructions. Mail order houses are featuring a growing number of do-it-yourself kits for home plumbing, and other jobs.

* * *

TRANSISTOR-EQUIPPED appliances will be on the mass market by 1960. Current production research promises a wide range of home equipment using the tiny tubes—smaller, longer-lived, cooler and eventually cheaper than conventional models.

* * *

CIVIL DEFENSE spending hassles are a likely outcome of a new radiation warning device now on the market. The portable alarm is an eye-catcher, designed to emit a powerful red beacon light when radiation reaches danger point. Backers see it catching public fancy due to current radiation concern, putting on extra pressure for CD adoption.

* * *

CLIMATE now can be eliminated as a worry for busy and heat-conscious executives. With a little planning, the tycoon can spend his days slipping from air conditioned home into a a cooled limousine, driving to a temperate office, lunching in a climatized restaurant, shopping along a ventilation-controlled mall, playing in carefully chilled bars, movie houses, night clubs, etc. It takes planning now, will soon be hard to avoid.

"OPERATIONS RESEARCH" — a fuzzy-word used for want of a better one — is due for major developments in Canada within a year. Three large companies now have teams planning strategy, are well pleased with results. A ripe field: Food business where furious chain competition, big volume, low margins, place a premium on accurate decisions. "OR" teams, made up of varied combinations of economists, physicists, production men, advertising experts, academics and others (a) break down departmental barriers, (b) reduce management errors, (c) add to available new ideas.

* * *

AGRICULTURE OUTLOOK adds up to woe in Eastern Canada, prosperity in the West. Maritimes, Quebec and Ontario shoppers will be paying higher prices, getting lower quality for many farm products as result of cold, wet weather this spring. Seeding was late, early-sown crops damaged by frost. In the West, planting is ahead of year-ago, growing weather has been great. With luck, farmers expect bumper crops from Manitoba to the B. C. coast, consumers can look for bargain rates.

Stock Market Highlights

Industrials

Canadian industrial stocks churn slowly higher as recovery move continues for second week. Slowdown signs apparent at mid-week after steady run of rising prices. For details on some of these stocks that moved, see page 4.

Mines and Oils

Nickel holding limelight with **Falconbridge Nickel** jumping sharply for $3 gain at $37¼, reportedly on New York buying. **Frobisher**, which has major interest in Falconbridge adds 30c at $4.60.

Nickel Rim features nickel-coppers racing ahead of other similar issues in hitting new high at $4.75 for gain of about $1 in 10 days. At mid-week, stock is trading at $4.55.

Coldstream Copper chalks up 35c gain in week at $1.65 as drill on third level runs into what may become new copper zone. **New Jaculet** reacts briefly to 36 ft. intersection of 3.3% copper with 45c gain at about $1.97.

Resumption of milling planned by **Mackeno** brings in demand that carries stock to 49c from about 35c.

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PRICES

Copper, holding at 46c lb. with U.S. virgin producers despite custom smelters quotes around 40c, U.K. market close to same level. Strong possibility price is being held up now for strategic drop later during labor negotiations.

Synthetic ammonia cut $5 a ton—from $85 to $80—by key U.S. and Canadian producers. Combination of expanding production facilities and disappointingly slow sales this spring to the fertilizer trade forced the drop.

English-Language TV network rates upped average 24% by CBC. Increase reflects addition of three new stations to web, bringing total to 31 across Canada. **TV station** rates increased 8%-10% by CBC indicating solid demand for some types of commercial time, growing audience power as set ownership rises.

Steel scrap prices have been cut for the second time this month. The latest reduction averages $2 a ton. This — along with the average $5.50 a ton reduction on June 1 — represents a total drop of $7.50 a ton. Continued weakness in scrap in U.S. has been the big factor in the easier price trend in this country.

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Trend of Business

Job seekers only 2.9% of labor force by mid-May compared with 4.4% a month earlier and 3.8% a year ago. Total labor force (job holders + job seekers) is 127,000 larger than last year. At mid-May, people holding down jobs numbered 5.5 million, some 175,000 more than a year earlier. Persons looking for work totaled 165,000, sharply down from the month before's 257,000 and well below the year earlier 213,000.

Auto sales chalk up good sized gains in April. Some 58,397 new motor vehicles were snapped up by Canadians, 8.3% more than in the same month last year. Total bill to the buyers came to $169.1 millions, 17.7% bigger than a year earlier. This pushed number of units sold during the first four months of this year up 10.4% for a 22.9% gain in value.

Motor vehicle finance companies doing a roaring business. With bigger sales in April, financing reached new highs. New motor vehicles: number financed rose 31.4% from a year earlier to reach 21,661 units; value of financing increased 53.3% to pass the $32 million mark. Used vehicles financed: 42,530 units (+ 7.3%); credit extended $37.7 millions (+ 14.8%).

April wholesale sales run 16.9% ahead of those a year earlier by topping $638 millions. Food and meat sales down slightly during the month but most trades report sharp increases led by: auto parts, + 161.4%; industrial and transportation equipment + 59.8%; farm machinery, + 35.1%. April's gains brought first four month sales to $2,294 millions, up 16% from a year ago.

Retail sales holding firm with Canadian retailers taking in $1,107 millions during April, up from $1,045 millions the month before and fractionally higher than April 1955's $1,101 millions. Stores in Quebec, Saskatchewan, Alberta, and B. C. set the pace and of the 16 trade categories, dealers selling fuel, lumber and building materials and motor vehicles chalked up the big increases. Total year to date sales at $3,896 millions are 6.6% ahead of those a year earlier.

Farm cash income bounces back in first quarter. It came to an estimated $517.9 millions, 11% higher than in 1955's first three months and about 1% ahead of 1954's first quarter. Behind the increase: sharply larger wheat participation payments, bigger sales of poultry as well as increased sales of oats, rye, flax, corn, cattle, dairy products and eggs.

No let-up in trend to climbing railway car loadings. In the last 10 days of May, over 145,000 cars were loaded or 32.3% more than in same period last year. This pushed May loadings 11.2% ahead and year to date number up 12.3%. In first five months these products accounted for this year's gains: grain, coal, iron ore, manufactured iron and steel products, fuel oil, other mine products, miscellaneous items.

Tobacco manufacturers aren't complaining. Tax-paid withdrawals of cigarets for consumption in Canada neared the six billion mark during the first quarter. This is 11% larger than in same months last year. At the same time, 60.6 million cigars were brought out for sale, 10.4% more than in last year's first quarter.

Sawn lumber production eases during first quarter. B. C. output increased 1% in March but fell 1% in the quarter. East of the Rockies, production declined 12.6% in March and was off 6.2% in the quarter. Only New Brunswick, Quebec and Ontario had gains in the first three months but these were not large enough to offset over-all drop.

Here's how the mines are doing. In the first three months of this year all but two minerals were produced in larger quantities than a year ago: iron ore, + 103.1%; nickel, + 5.0%; copper, + 13.1%; zinc, + 3.8%; gold, + 1.7%; silver, + 1.7%; gypsum, + 53.6%; lime, + 0.6%; cement, + 33.6%; coal + 6.8%; salt + 37.5%; natural gas + 20.5%; petroleum + 44.6%; lead — 11.1%; asbestos, — 2.2%.

Clay makers report bigger sales with heavy demands coming in from the builders. Sales of clay products amounted to $2.3 millions in March, 5.3% higher than a year before. Gains were greater in the first quarter as a whole with sales jumping 22.2% above year earlier levels. In that period, sales pace was set by makers of building brick, structural and drain tile, sewer pipe and fireclay blocks.

Major Weekly Indicators

		Latest Week	Week Ago	Month Ago	Year Ago
Department sales (% ch. from year earlier)		+9.4%	+9.0%	+15.6%	+13.0%
Carloading totals	(cars)	145,008*	77,562	87,241	*109,686
Eastern Canada	(cars)	94,023*	50,668	54,781	*71,944
Western Canada	(cars)	50,985*	26,894	32,460	*37,742
Iron & Steel (mfd.)	(cars)	2,322*	1,338	1,719	*1,794
Ores, concentrate	(cars)	15,694*	8,235	6,118	*11,290
Base metals	(cars)	1,211*	600	677	*784
Lumber, timber, plywood	(cars)	4,330*	1,560	3,885	*4,144
Cement		2,468*	1,120	1,359	*1,602
Passenger car prod.	(no.)	9,582	10,288	11,465	10,611
Truck production	(no.)	2,607	2,416	2,832	2,389
Bus. failures 4-wk. moving av.	(no.)	27.5	25.5	28.3	23.5
Chartered Bank					
Personal savings	($ millions)	5,876	5,833	5,871	5,521
Loans outstanding	($ millions)	5,344	5,292	5,252	4,144
N.H.A. mtge. holdings	($ millions)	379	377	364	134
Bank of Canada holdings of securities	($ millions)	2,356	2,353	2,310	2,217
Short-term govern.	($ millions)	1,092	1,113	1,059	1,367
Long-term govern.	($ millions)	1,215	1,191	1,202	813
Other Securities	($ millions)	37	37	37	37
Canadian dollar (U.S. cents aver.)		101.536	101.081	100.837	101.581
T.S.E. industrial index		453.06	499.13	444.00	414.77
Dom. Bonds yield index ('35-'39=100)		.....	113.2	115.5	95.4
Yield 114 stocks		4.62%	4.64%	4.50%	4.30%
Bank Clearings					
Montreal	($ millions)	739	799	680	603
Toronto	($ millions)	834	1,058	913	743

* 10-day end of month total.

* * *

Facts by the Month

	LATEST MONTH AVAILABLE	One Month Previous	Two Months Previous	One Year Previous
WHAT WE PRODUCE—				
In all industries (Index)	277.3	266.4	257.7	251.9
In factories (Index)	282.3	269.9	259.5	250.5
Total nondurable goods (Index)	242.0	232.7	223.3	222.2
Food & bev. (Index)	218.6	199.4	193.4	200.4
Textiles (Index)	209.7	198.3	179.0	196.1
Clothing (Index)	168.9	165.3	156.6	154.0
Chemical products (Index)	300.7	291.3	289.2	284.0
Total durable goods (Index)	345.4	328.1	316.1	318.0
Iron & steel products (Index)	330.2	328.4	306.0	271.5
Primary iron & steel (Index)	437.0	425.8	391.5	336.2
From mines (Index)	249.7	242.7	238.9	203.8
Metals (Index)	136.3	130.3	130.1	126.6
Nonferrous smelting, refining (Index)	238.9	224.2	220.6	262.3
Gold (Index)	111.4	105.8	104.0	104.0
—From farms				
Hogs graded (000)	590	449	493	536
Cattle delivered (000)	160	129	142	149
Flour (Index)	139.3	135.7	129.5	149.2
—From sea				
E. Coast catch ($000)	3,218	1,796	2,008	3,536
W. Coast catch ($000)	507	1,152	2,287	407
—From forests				
Newsprint (000 tons)	553	515	527	539
Pulp (000 tons)	843	818	866	786
—In powerhouses				
*Electricity (Index) (seasonally adjusted)	297.2	285.4	286.7	297.9
WHAT WE SELL—				
*Retail sales ($ millions)	1,107	1,045	864	1,101
Dept. store sales ($ millions)	95	94	75	90
*Wholesale sales ($ millions)	638	654	528	546
Mfrs. outstdg. orders ($ millions)*	2,798	2,859	2,698	2,539
*Pass. car sales (units)	38,397	36,551	23,267	38,911
WHAT'S ON HAND—				
Mfrs. inventories ($ millions)*	4,393	4,359	4,280	4,149
Dept. store stock sales ratio	2.9	2.6	3.1	2.8
SPENDING, SAVING POWER—				
Labor income ($ millions)	1,093	1,080	1,125	996
Dividend payments (Index) (annual rate)	297.0	294.5	292.7	263.7
JOBS—				
*Persons with jobs (000)	5,499	5,326	5,241	5,324
*Jobless seeking work (000)	165	257	295	213
*Do. (% of labor force)	2.9%	4.4%	5.3%	3.8%
CONSTRUCTION—				
Contract awards ($ millions)	321	224	281	290
FOREIGN TRADE—				
Exports ($ millions)	398	333	353	340
Imports ($ millions)	532	466	407	382
MONEY—				
Money supply ($ millions)	5,580	5,605	5,791	5,347
Cheques cashed ($ millions)	16,383	14,670	15,198	12,689
Life insurance sales ($ millions)	273	247	272	240
Notice deposits ($ millions)	6,257	6,197	6,154	5,972
Current public loans ($ millions)	4,962	4,901	4,889	3,979
PRICES—				
Consumer price (Index)	116.6	116.6	116.4	116.4

*New indices with dollar value replacing index numbers.

Index based: production wholesale sales 1935-39=100; consumer price index, 1949=100; manufacturers' inventories outstanding orders Dec. 1952=100.

STRATEGIC MATERIALS—Production and Supply—

	Latest Month	Month yr. ago	Yr. to date	% chge. yr. to date
*Steel ingots and castings (000 tons)	434	361	1,709	+23.5%
Primary copper (000 tons)	32	27	80	+13.1%
Nickel (000 tons)	15	15	48	+5.0%
Cement (000 bbls.)	2,077	1,856	5,857	+12.1%
Lumber (millions fbm.)	690	724	1,906	—3.8%
Lumber exports (millions fbm.)	322	367	937	—9.7%

*New item this week.

Date of issue for your file, The Financial Post, June 23, 1956.

New Exchange Law Will Aid Brazilian

There's good news from down Rio way for shareholders of Brazilian Traction, Light & Power Co.

First, Brazilian Government has recently passed legislation to compensate public utilities for any increase in the cruzeiro rate of exchange.

Second, recent tramway fare hike to 1½ cruzeiros from 1 cruzeiro should help only subsidiary showing a loss.

Law provides for automatic adjustment of hydroelectric rates to take care of rate fluctuations, but applies only to remittances for debt financing. Long-term debt totaled $151 million at end of 1955.

So far company has not availed itself of new law as the official exchange rate for the cruzeiro is still around 18.82, for public utility remittances. A premium of 25 cruzeiros makes the rate 43.82 cruzeiros to the U. S. dollar.

Brazilian blamed last year's 6.8% drop in net profit ($18.5 millions in 1955 vs $19.8 millions in 1954) on the continued decline in the cruzeiro's value and the absence of adequate tariff adjustment to compensate.

In 1955 company was granted higher tariffs as well as increased telephone and electric rates in some areas after strong representations. These helped improve cruzeiro earnings in latter part of year. This year it has obtained further increases.

Over-all return on plant investment was only 2.26% last year (2.55% in previous year) despite tariff adjustments.

Basis of conversion into U. S. dollars for past two years has been to value earnings at actual remission rates, and to value unremitted balance of cruzeiro earnings at average free market for year (73.54 cruzeiros to $1 U. S. in 1955 and 62.18 in 1954).

114 Stocks Yield Averages 4.62%

The average yield on 114 dividend-paying stocks on the Toronto Stock Exchange, as compiled by Moss, Lawson & Co., on prices of June 18, was 4.62%, off .02% from the previous week. The current yield compares with 4.50% one month ago and 4.30% in the corresponding week last year.

Here is the yield by various groups:

	June 18 %	Week Ago %	Month Ago %	Year Ago %
Common	4.14	4.15	4.03	3.93
Pfd. & A	4.75	4.70	4.62	4.21
Mining	6.01	6.09	5.88	5.45
Banks	3.39	3.42	3.23	2.97

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A. Lambert Inc. Issue Offered

MONTREAL (Staff) — A new issue of $500,000 5% cumulative convertible redeemable shares (1956) of $20 par of Alfred Lambert Inc. has been offered at $19.50 per share by Rene T. Leclerc Inc. Proceeds will be for general corporate purposes.

The 25,000 shares are convertible up to June 29, 1966, or the close of business on the business day immediately preceding date fixed for redemption, whichever is the earlier, to one fully paid participating Class A share of $1 par. Price range of the Class A shares this year has been $17-$13, with recent price $13 a share.

There will be provisions for appropriate adjustment in the conversion privilege, including any subdivision or consolidation of purchase of Class A shares or payment of stock dividend on the participating class A shares.

The shares are redeemable at the option of company at prices of $21.50 per share prior to June 30, 1961, and at $21 per share after this date. In each case there will also be paid an amount equal to all unpaid preferential dividends accrued to date fixed for redemption.

At Dec. 31, 1955, balance sheet indicates working capital at $4,125,150. Consolidated net profits for year ended Dec. 31, 1955, amounted to $208,543 against $124,833 in 1954.

Consolidated net profits for the 10 years ended Dec. 31, 1955, after interest, depreciation and taxes averaged $206,566 per year or more than eight times the aggregate annual dividend requirements of $25,000 on the preferred shares (1956) to be outstanding on completion of the present financing.

As principals we offer subject to prior sale and change in price:

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Plus, Minus Signs of Boom

(Continued from page 1)

rate of $6.2 billion, in spite of the drop in housing.

The seasonally-adjusted figures show up this way:

Housing was 10% below the last quarter of 1955, but nearly 7% above the first quarter of 1955.

Non-residental construction was 12% higher than the last quarter of 1955 and a whopping 27% higher than a year ago.

Expenditure on new machinery and equipment was 5½% higher than the previous quarter, and 36% higher than a year ago.

Imports:

The surging imports of machinery and equipment fully accounted for the increase in Canadian expenditure on these capital goods. Indeed, imports account for fully one third of the rise in Canadian national expenditure between 1955's fourth quarter and 1956's first.

In terms of major groups, the biggest import increase was in the "iron and steel products." Other big increases (on deseasonalized figures) were in non-ferrous metal products, non-metallic minerals (oil, etc.) and the miscellaneous group.

It is reasonably clear that the requirements of the investment program account for most of the abnormal surge of imports; and finished goods (as in machinery and equipment) play a large part in it.

But this is still a field where statistics are lamentably inadequate. There is no division of imports into meaningful categories which would show just how large a share of our imports is going into investment and how much into consumption. Nor is there any satisfactory breakdown between materials and components brought in by Canadian manufacturers for processing here, and finished goods brought in for use without any Canadian manufacture.

Inventories:

The first quarter build-up of business inventories was the biggest since the hectic post-Korean inventory accumulation in the second quarter of 1951. It is estimated at an annual rate of $1.2 billion, more than twice rate of accumulation of the last quarter of 1955, and nearly four times the average rate of last year.

Well over half the inventory build-up was at the manufacturer's level; and it was concentrated in hard goods—machinery, equipment, iron and steel shapes and other "investment - type" goods. Compared with the end of 1955, rather more of the accumulation of inventory seemed to be in finished goods.

Substantial accumulation at the retail level — probably about a quarter of the total — featured chiefly automobiles. At the wholesale level the inventory accumulation was much more modest.

Uneasiness about the high rate of inventory build-up is partly allayed by the maintenance of a healthy ratio between inventory and sales. The "stock-sales" ratio, actually, was somewhat lower than in either of the past two years.

Nevertheless the high level of inventories is regarded as a reason for some caution. It means that any fall-off in sales could quickly spread a certain slackness back to the manufacturers.

Manufacturing:

Canadian manufacturing lagged in the first quarter. Seasonally adjusted figures show output a fraction lower than in the last quarter of 1955. So manufacturing industry had no part in the over-all growth of the economy during this period.

This check in manufacturing followed a year of modest growth in 1955.

Manufacturing output in the first quarter was 7½% above first quarter of 1955. This compares with the growth in total G.N.P. of more than 11%.

Comparing first quarter of 1956 with the previous quarter (as well as the seasonally adjusted figures allow), you get this picture:

Total manufacturing output ..... down 0.2%
Total durable .... down 1.1%
Total non-durable,... up 0.6%
Biggest declines were:
Electrical apparatus (mainly due to TV).
Non-ferrous metal manufacturers (mainly aluminum).
Rubber goods.
Textiles.
Chemicals.
Among the increases in output were:
Iron and steel products.
Transportation equipment.
Wood products.
Food and beverages.

Spending:

Canadians had 8% more income than in the first quarter of 1955. Labor income was nearly 10% higher, and investment income 24% higher.

Taxes took 10% more than a year earlier. But personal spending matched the rise of incomes. It was 8% higher than a year earlier, and 2% higher (on a deseasonalized basis) than the last quarter of 1955.

Demand for non-durable goods, including clothing, went on increasing steadily. Services also took more of Canadians' money. But demand for durable goods was less than at the end of 1955, though far higher than a year ago.

Chief change this year was the marked reduction in TV sales and a lesser reduction in cars. Furniture and household goods were still in strong demand.

Prices:

Although consumer prices have been relatively stable, it is calculated that the capital investment program has been costing 7-8% more than it would have a year ago. This general comparison of cost levels holds good both for machinery and equipment and for non-residential construction. The cost increase for housing was lower — about 4%.

In over-all terms, the increase in Gross National Production — at 11% compared with a year ago and 3% over last quarter of 1955 —includes price increases as follows:

Compared with a year ago: plus 3%.

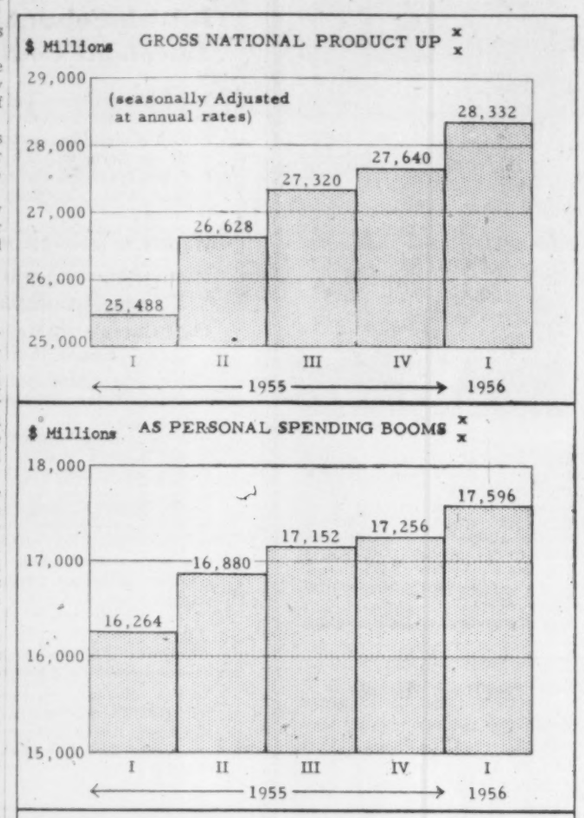
Compared with previous quarter: plus about 1%.

Profits:

The general level of corporation profits flattened out from the last quarter of 1955 to 1956. In total, first quarter profits were about same as the last quarter. But they were still much higher than a year ago; and there were mixed movements between industries. Mining, transportation and communications showed the best gains. Manufacturing and retail trade profit margins were being squeezed.

In the manufacturing group, profits were lower for: Iron and steel products as a group, non-ferrous metal products, non-metallic minerals, and food and beverages.

The Progress of the Boom



Look For It Here

June 23, 1956

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Auto Production

	Wk. End. June 16	To Date 1956	To Date 1955
Am. Motors:			
Hudson	37	1,045	....
Nash	62	2,525	....
Total cars	99	3,570	2,153
Chrysler:			
Chrysler	120	3,877	....
Desoto	40	1,238	....
Dodge	964	27,644	....
Plymouth	913	23,681	....
Total cars	2,037	56,440	50,070
Dodge	165	3,093	....
Fargo	165	2,798	....
Total trucks	330	5,891	4,524
Cars, trucks	2,367	62,331	54,594
Ford:			
Ford	1,690	40,863	....
Mercury	138	4,849	....
Meteor	761	18,948	....
Monarch	64	4,880	....
Total cars	2,653	69,540	64,229
Ford	422	11,030	....
Mercury	154	4,530	....
Meteor divy.	12	400	....
Total trucks	588	15,960	13,508
Cars, trucks	3,241	85,500	77,737
GM:			
Buick	669	9,398	....
Chevrolet	2,632	28,374	....
Oldsmobile	358	5,571	....
Pontiac	1,134	23,141	....
Total cars	4,793	66,484	94,898
Chevrolet	885	10,988*	....
GMC	432	7,649*	....
Pontiac divy.	48	680	....
Total trucks	1,365	19,317	18,768
Cars, trucks	6,158	85,801	113,666
International:			
Trucks	324	8,342	4,044
Stude.-Pack.:			
Studebaker	....	5,056	4,886
Trucks	....	....	242
Cars, trucks	....	5,056	5,128
All cars	9,582	201,090	216,236
All trucks	2,607	49,510	41,086
All vehicles	12,189	250,600	257,322
Prev. wk.	12,704	....	....
Last yr.	12,998	....	....

*Revised; for week ending June 2. Chevrolet truck should be 798 and GMC 513.

Car Buyers Battle As Sales Better

(Continued from page 1)

where low farm income has hindered past sales.

—Sale expects (along with other auto industry leaders) that 1956 sales will equal or surpass last year's; and that 1957 will be even better.

This has important meaning for the Canadian economy:

—The buoyancy which big sales of new cars lends to the economy (they make up close to 10% of all retail sales) should continue indefinitely unless Canadians are "talked" into a recession by the pessimists (The Post, June 2),

—Plans for capital expansion now being drawn in the auto industry (The Post, Dec. 3) will have to be hurried. This will be another multimillion-dollar economic hypo.

—A new pattern of super-high April-to-August vehicle sales seems to have been established. Sales in the first quarter of 1955 weren't impressive, gave no hint of the 466,000-unit record to be established. (Previous high: 462,500 in 1953).

Again this year, first quarter sales did little more than match 1955. But, apparently, they zoomed in April and May, bettering even last year's sensational performance in those two months.

Better Do Your Hiring Now — Labor Shortage Shaping

(Continued from page 1)

be severely curtailed by lack of manpower.

Looking at it the other way, the men who have lost jobs in scattered layoffs are going to find it much easier to find work this year than they have in the last two.

This new picture of near-full employment is going to speed governments and industry in their search for more immigrants.

A number of industries already are taking a look at European manpower with a view to finding willing workers. In some farm areas this year — notably in Ontario and southern Alberta —the labor shortage is going to be worst since the war days, when city people had to pitch in to take off the crops.

Construction Suffers

The construction industry from coast to coast seems to be suffering most from the competition for workers. Industrial and engineering building programs throughout the country are creating more job opportunities than can be readily filled.

However, an easing in housing construction may help this situation a little.

Demand for workers is more generally pronounced in Ontario and the Prairie Provinces than elsewhere. Ontario's labor force at May 19 was 55,000 or 2.7% greater than a year earlier, while employment was up 69,000 or 3.5%.

On the Prairies, 991,000 people had jobs — 24,000 more than at the same date in 1955. Here, as in Ontario, agriculture was especially short of workers.

There's been a brisk upturn in Prairie business activity, due to heavy export shipments of grain —mainly wheat.

Agriculture in British Columbia and the Maritimes has been held back by a late, cold spring, and the demand for farm workers is below normal.

Other soft spots in the labor market were noticeable in some Quebec textile centres, hit by strikes; in some of Ontario's auto and farm equipment industries; and in logging throughout Western Canada, where forest fires were more numerous than usual.

Quebec Textile School Graduation

MONTREAL (Staff) — Graduation exercises at the Quebec Textile School, St. Hyacinthe, this year had an international flavor. One student from Greece and another from Haiti were among the 23 who received their diplomas last week.

Principal Georges Moore, in the convocation address, said the school needed more students. Positions in the Canadian textile industry awaited every graduate. The school, operated by the provincial government, receives a large measure of support and assistance from the textile industry.

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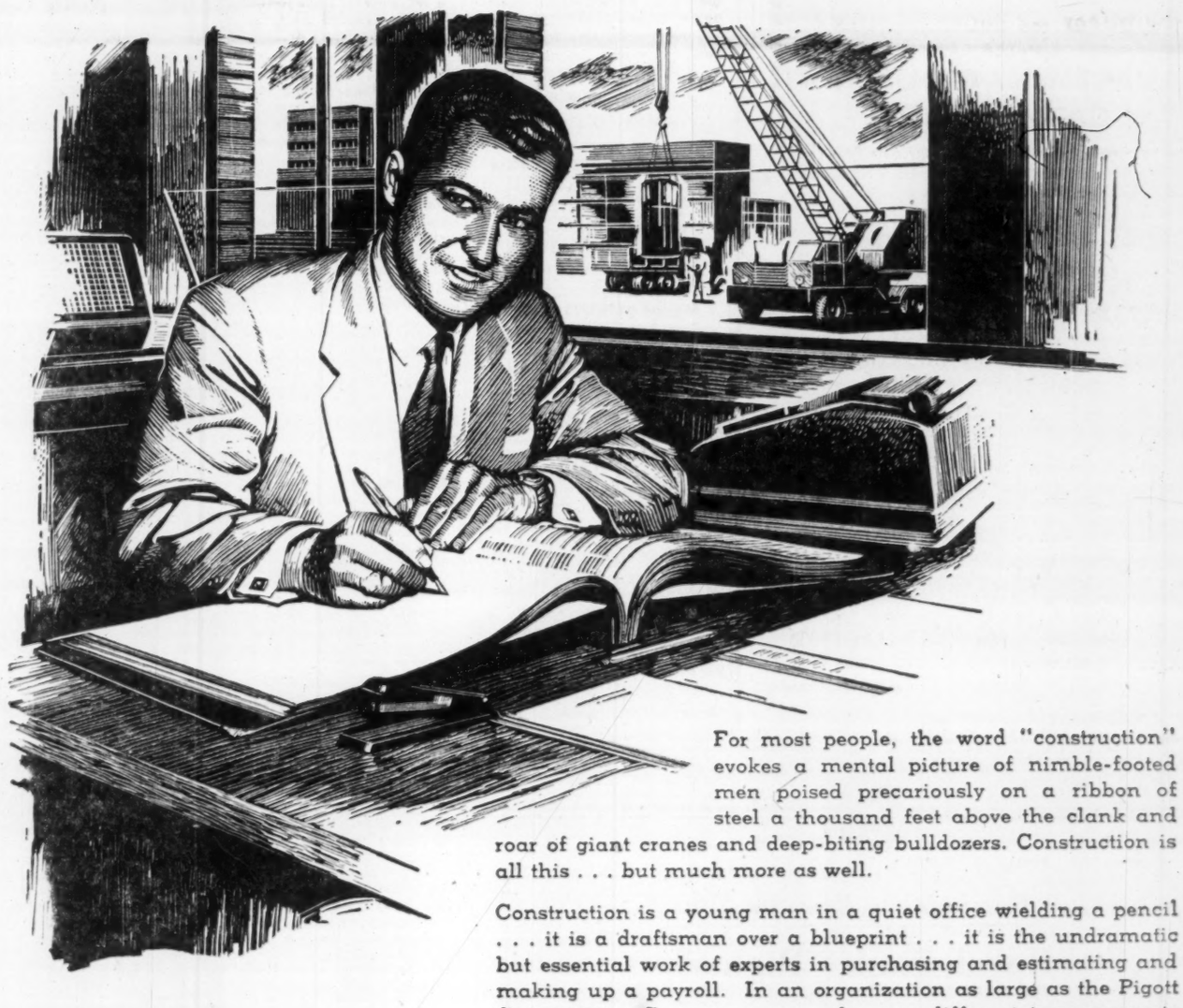

"Archie" Altobelli, Junior Accountant, is being trained in the main office with additional experience being gained in field and "job" offices.

For most people, the word "construction" evokes a mental picture of nimble-footed men poised precariously on a ribbon of steel a thousand feet above the clank and roar of giant cranes and deep-biting bulldozers. Construction is all this . . . but much more as well.

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ANNOUNCEMENT

VANADIUM-ALLOYS WORKS MANAGER

A. MURRAY McLEAN

Edward P. Geary, President, Vanadium-Alloys Steel Canada Ltd., London, Ontario, announces the appointment of A. Murray McLean as Works Manager. Mr. McLean was formerly with Atlas Steels for fourteen years.

More Financing is Likely For Bowater in Canada

MONTREAL (Staff) — Bowater Corp., of North America Ltd., is expected to do further financing in Canada to pay for the acquisition of the assets of Mersey Paper Co. of Liverpool, N. S. Time or amount is not known.

Shareholders of Mersey were expected to approve late this week the offer for the assets made through a new wholly owned subsidiary of Bowater, Scotian Paper Co. Directors earlier accepted the proposal and decided to recommend shareholders' approval.

Work on the new groundwood pulp mill at the Mersey site with a capacity of about 100,000 tons annually likely will begin this year.

The recent offer by the Bank of Montreal to the I. W. Killam Estate for the 155,000 shares of Mersey or about 78% of the outstanding stock at $230 per share was made on behalf of Nesbitt, Thomson & Co., as principals.

A similar offer of $230 per share was made to minority shareholders by the Royal Trust Co. on behalf of the same firm. W. C. Pitfield & Co. is associated with Nesbitt, Thomson & Co. in this offer.

The offer to minority shareholders required them to deposit shares on or prior to July 7, 1956. Payment for shares will be made on July 17.

Since there are 198,254 shares outstanding of Mersey, the offer of $230 per share indicates an outlay of $45.6 millions if the offer is accepted by all shareholders.

It is proposed to sell the assets of Mersey to Scotian Paper, a subsidiary of Bowater Corp. of North America, and Mersey Paper Co. will be wound up.

A letter accompanying the offer points out that in the event of winding up of Mersey, shareholders, other than taxable Canadian corporations, who do not accept the offer or otherwise dispose of the shareholdings may be deemed, under the Income Tax Act, to have received a dividend equal to their portion of the distributed income of the company on hand at the date of distribution. Consequently, they may be subject to Canadian federal income tax or non-resident withholding tax, as the case may be, in respect of such dividend.

At Dec. 31, 1955, total assets of Mersey Paper are shown at $30,263,968 compared with $31,007,268 the same time previous year. Fixed assets are shown at $21,818,410 against $21,446,571.

Bowater Corp. of North America holds all the outstanding common shares of these subsidiaries: Bowater's, Newfoundland Pulp & Paper Mills Ltd., Bowater Power Co., Bowater's Southern Paper Corp., Bowater's Fibreboard Co., Bowater Paper Co. It also controls 11 other subsidiaries.

New Mat Service Offered Merchants

A new mat and stereo service has been introduced by the Retail Merchants Association of Canada (Ontario) Inc., to spruce up merchants advertising copy.

The mats and stereos, seven to a set, are set up as small panels to be included in regular advertising copy. The various versions include a merchant's pledge to provide service, value and quality and housewife praise of independent merchants' prices and courtesy.

Why They're Moving

Facts and comment on what's going on in the market and rumors behind some of the moves.

By FRANK KAPLAN

An indication that there is a solid support base under present market levels is the ability of share prices to weather the pressure of heavy stock offerings in the form of rights. Seven companies listed on Canadian markets have granted shareholders the right to buy additional shares. By this means, the firms hope to raise some $200 million of new investment money.

Investors must either sell present holdings or find new money to take up these shares. Finding new money can be difficult since banks have tightened up on new loans. Although the new money isn't needed immediately, the market tends to anticipate the demand. Therefore, reason analysts, the ability of the industrial market to withstand the pressure of this new stock is a good omen.

* * *

The usual pattern of a rights offering is to depress the price of the existing issue. But once the new stock is absorbed by the market, all the shares of the company tend to firm over varying periods to the prerights price. One factor tending to depress prices during the term of the offering is the fact that the U. S. investors cannot legally take up the additional shares by exercising their rights unless the issue has been cleared with the U. S. securities authorities.

Here is a list of outstanding rights showing market prices, and basis of the rights.

	Latest Price	Early May	1956 High	Basis	Price	Expiry Date
	$	$	$		$	
Bank of Nova Scotia	54	67	68½	1 for 5	23	Sept. 5
Bell Telephone	46	49⅞	51¾	1 for 8	37	July 27
Chartered Trust	56	65	72⅜	1 for 5	40	July 3
Royal Bank	59¼	60¼	65½	1 for 5	36	June 29
Steel Co. Canada	58⅜	74¼	80	1 for 6	46	July 3
Toronto-Dominion Bank	42¾	53½	56½	1 for 3	32	Aug. 14
North Star Oil	14	17½	17¾	2 for 5	12½	July 11

* * *

THE STREET IS TALKING ABOUT — the boost given major Canadian oil and gas companies by new income tax legislation covering drilling and exploration expenses of companies they acquire. This is seen as of particular benefit to **British American Oil** which is taking over Canadian Gulf. B-A adds $2½ at $42¼ on the week in brisk dealings . . . Similarly, **Imperial Oil** at $50 is up from $48¾.

Here's how U. S. investors look at Gulf Oil's acquisition of a larger interest in B-A in return for its Canadian Gulf. Bache & Co., a U. S. investment firm, says: "This sets the basis for the creation of an organization better situated to exploit Canadian resources and also should provide a larger outlet for Gulf's near-east crude."

Another oil that attracts attention is **Regent Refining,** subsidiary of Trinidad Oil which is being taken over by Texas Oil. Regent bumps ahead to $16½ after sagging as low as $13 when opposition to the Trinidad-Texas deal appears briefly in the U. K.

* * *

Hudson Bay Mining & Smelting a highlight among major mines at $83 for a gain of almost $6 over the week. The stock is well up from its low of $64. Buying said strong from the U. S. since company reported major find in the Snow Lake area of Manitoba. Recent impetus to stock said based on inside information on drilling results, but so far nothing official.

Fuss over **Penmans** with outsiders trying to acquire the textile firm through offer to buy shares over for the time being. Stock at $24½ is down from $25½. Offer for common was at $26.

Thin markets can make for volatile issues. **Niagara Wire Weaving,** jumps $3¾ to $51¼ on turnover of only 60 shares. Similarly, **Dominion Electrohome,** believed controlled by President Carl A. Pollock of Kitchener, Ont., bumps ahead $1½ at $11¼ on some 200 shares. **Claude Neon A & B,** normally very quiet, rise sharply with the A jumping $3 to $6¾ and the B up $2 to $5¾ on trades of about 1,500 shares.

* * *

Earnings reports still trickling in. **Chateau-Gai Wines** reports sales at record levels in the year ended April 30 but earnings down slightly at $1.31 a share, as against $1.33. Stock at $15⅛ is down from $17 last price . . . **Standard Paving** slips back to $40 from $41½ although reporting 24% increase in sales.

The highly selective market continued to concentrate on the "big" favorites which rebounded strongly from previous losses and continued edging ahead. **Aluminium Ltd.** at $125⅛ is up from $120½. **CPR,** always a pace setter, chalks up a ⅝ gain at $31⅜ and its subsidiary — **Consolidated Mining and Smelting** — rises $1⅛ at $32⅞ . . . Auto stocks continue strong with **Ford of Canada A** a leader in rising $7 to $123½ . . . **Maxwell** at $8 is up from $7⅜ after sale of its holdings in **Universal Cooler** announced.

* * *

Ever wonder what stocks a life insurance company can buy? You'll find the answer in "The Eligible Book," bible of the people who guide the investment affairs of the big institutions and of those who handle estates. This book lists the some 490 common and preferred shares listed on the Toronto and Montreal Stock Exchanges that are considered eligible for investment by insurance companies under The Canadian and British Insurance Companies Act. This year's edition — the 22nd, compiled by Cochran, Murray & Hay — includes some 30 new entries.

Among the new common stocks are **Abitibi Power & Paper,** ($38⅞); **Canada Foils** ($13½ offered); **Delnite Mines** (70c); **Crow's Nest Pass Coal** ($1.92).

* * *

OTHER MARKETS — Westcoast Transmission units feature over-the-counter dealings in jumping about $20 to $145 for each $100 principal amount. These units consist of a 5½% bond and three shares of stock. The stock can be separated from the bond late in 1957. Westcoast common voting trust are trading at about $20¼ for a $3 gain on the week. Buying said generally Canadian and originating from major investment sources. Rumor says Westcoast revising contracts with U. S. gas buyers so that line will be operating at capacity from day gas starts flowing.

Insurance issues also slightly better and **Northern Telephone** edges ahead about 10c at $4.60-$4.85 . . . **Inland Natural Gas** also higher at $6⅛, gain of about ½.

Overseas markets irregular with oils featuring in London. **British Petroleum** (formerly Anglo-Iranian) climbs to $21¾-$22¼ from $19½-$20. **Trinidad** which will shortly be acquired by the Texas Co. of the U. S., bumps ahead to $10¼ from $5¾ just before the proposed stock purchase deal was announced. Texaco would buy Trinidad shares at about $11.

ANNOUNCEMENT

Molson's Appoints Asst. Gen. Manager

P. T. MOLSON

whose appointment as assistant general manager of Molson's Brewery Limited is announced by Hon. H. deM. Molson, president. He will also continue to act as assistant secretary of the company but will relinquish his position of assistant to the president. Mr. Molson joined the Brewery in 1953 after several years of service with the Department of External Affairs.

Getting Ahead

Astute businessmen plan for success; they read The Financial Post because it helps them make right decisions. Yearly by mail in Canada, $6; elsewhere $7 yearly.

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NOTICE

Notice is hereby given that Certificate of Registry No. C1814 dated June 6, 1956, has been issued to the Firemen's Mutual Insurance Company, authorizing it to transact in Canada the business of Fire Insurance, Aircraft Insurance, Automobile Insurance, Boiler Insurance, Explosion Insurance, Inland Transportation Insurance, Machinery Insurance, Personal Property Insurance, Plate Glass Insurance, Real Property Insurance, Theft Insurance and, in addition thereto, Earthquake Insurance, Falling Aircraft Insurance, Hail Insurance, Impact by Vehicles Insurance, Sprinkler Leakage Insurance, Water Damage Insurance, Weather Insurance and Windstorm Insurance, limited to the insurance of the same property as is insured under a policy of Fire insurance of the Company.

B. F. CURIT,
Vice-President & Secretary.
James P. McD. Costigan,
Chief Agent in Canada,
Toronto, Ontario.

A Reminder to Exercise Your

Royal Bank "Rights"

Holders of Rights to subscribe for shares of The Royal Bank of Canada at $36.00 per share on the basis of one share for each five shares held, are reminded that their *Rights expire June 29th.* After this date, they become null and void.

We strongly recommend that you exercise your Rights and that you do so without delay. If you do not intend to exercise them, they should be sold immediately *as they will have no value on June 30th.*

We offer our facilities both to holders of Rights to assist them in exercising or selling their Rights . . . and to investors who may wish to acquire Royal Bank shares through the purchase of Rights before the expiration date.

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Merger Plans Worked Out For Panhandle-Petrofina

MONTREAL (Staff) — Shareholders of Panhandle Oil Corp. and American Petrofina Inc. will meet soon in Wilmington, Del., to vote on a merger plan of the two companies.

Directors have already agreed to the merger, which is important to Canadian Petrofina Ltd., and paves the way for a further stock offering of American Petrofina.

Here's what has happened:

The plan calls for American Petrofina to issue 1.3 shares of its class "A" stock in exchange for each outstanding share of Panhandle common.

This would mean issuance of 1,290,861 shares in exchange for all of the issued shares of Panhandle and cancelation of 600,000 Panhandle shares already held by American Petrofina.

As at Dec. 31, 1955, Panhandle had 1,592,970 common shares outstanding American Petrofina bought 27%, or 600,000 additional shares at $11.25 per share, bringing total issued shares of Panhandle to 2,192,870 shares. It has a three-year option to buy 257,000 more shares at the same price.

American Petrofina capitalization includes 1 million class "A" shares outstanding of 8 million authorized. It has 10 million class "B" shares issued of 20 million authorized and Canadian Petrofina has subscribed for 20% of the 10 million so far issued.

American Petrofina has not yet announced plans for refining, marketing and retail distribution of its oil products in the U. S.

A. F. Campo, executive vice-president of Canadian Petrofina, is also a director of American Petrofina and Panhandle Oil.

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NEW FIELD FOR INVESTORS?

By PAUL S. DEACON

Why Not Buy, Sell Mortgages?

Investment Dealers Look at Mr. Coyne's Proposal

If the Governor of the Bank of Canada, James E. Coyne, has his way, investors will be able to buy and sell mortgages, directly or indirectly, just as easily as they buy stocks and bonds.

At the annual meeting of the Investment Dealers' Association of Canada last week, he suggested that dealers were the logical people to develop a thriving secondary market in residential mortgages.

"In relation to securities, dealers have long recognized their responsibilities to develop and improve secondary markets, the after-issue or between-issues market, in the interest of borrowers and lenders alike," Mr. Coyne pointed out. "Only in this way can investments be rendered liquid — that is, provided with a market in which sellers can find buyers at any time without too great a change in value resulting from the activity of any one buyer or seller."

Canada hasn't yet a broad smoothly-functioning secondary market in mortgages, and this has become a very noticeable gap in the capital market, he held.

"The entry of the chartered banks into the field of making and servicing insured residential mortgages under the National Housing Act offers the possibility of a large and fairly continuous supply of such mortgages for re-sale to other investors.

"The banks, with their widespread branch system, can initiate and service a much larger volume of mortgage loans than they themselves would normally wish or be able to add to their portfolios. They can put together a representative bundle of mortgages — on properties located in any area or throughout the whole country — with good spread of risk, or what small risk is left after the 98% insurance feature is taken into account."

With a supply of merchandise available, it is up to the investment dealers to make a market for buyers and sellers alike, Mr. Coyne said. Some large parcels of insured mortgages have already been sold direct by the original lenders to big investors such as pension funds, but there is an obvious need for comprehensive facilities to promote broader distribution.

"The fact that the servicing function, in the case of insured mortgages, can be separated from the investment function is a great help in finding a broader market — an investor need not confine himself to his own area.

"On the technical side, there is need for more study of the costs involved and of the relationship between them — costs of acquisition, of transfer, of servicing the mortgage, cost of money, and cost of servicing the investor. This is familiar ground for investment dealers."

Mr. Coyne made one suggestion here: "I believe there is a place for intermediate corporations issuing their own debentures secured by mortgages — conventional as well as NHA mortgages — debentures which could be closely held or broadly distributed according to circumstances.

"Investors who feel, rather unnecessarily I think, that some opprobrium or loss of goodwill might result from occasional foreclosure action, might be interested in a mortgage corporation with only a few owners or debenture holders, thus combining impersonal ownership with very small costs of operation."

Aside from the improved investment quality of mortgages that should result, because of their greater liquidity, a secondary market would also tie mortgage interest rates more closely to the general market pattern, Mr. Coyne points out. It would be much easier to trade from one kind of investment to another, once there was an elimination or lowering of barriers which now deny access to the mortgage market to various classes of investors. should be able to operate in the mortgage field just as success-

The smaller investment houses fully as the larger ones, once any technical problems are overcome, he held.

The Dealers' View

How quickly the dealers could adapt their operations to this new field depends largely on how well they can solve some of these technical problems, investment men say.

The servicing costs on mortgages could amount to 1-1½% which leaves an effective yield of about 4%. Investors might object to getting that yield on a mortgage for which the coupon rate is 5%-5½%. However, with the 98% insurance feature backed by the Federal Government, they would still be getting a return considerably better than that on Government of Canada bonds.

Some mortgage experts suggest that selection is an essential part of investing in mortgages, and this would have to be arranged for by any dealers going into the field. Others contend that enough diversification could be achieved by buying mortgages from several areas, that the risk would be kept small. In any case, cost of selection services by mortgage consultants is small — less than half of 1% in most cases, which is relatively insignificant when spread over the life of the mortgage.

One snag pointed out by mortgage men in connection with the insurance feature is that the insurance is payable only on the turning over to Central Mortgage & Housing of the vacant property covered by the NHA mortgage. This means that foreclosure must first be carried out by the holder of the mortgage, and the former owner moved out. Although up to $125 is allowed by CMHC to defray legal and other expenses involved, very often such costs run much higher — perhaps $600-$700.

However, this is probably only 5% of the principal on an individual mortgage, and in relation to the total number of mortgages outstanding, such costs would be considerably less.

Some investment men aren't too keen on the idea of setting up special corporations to invest in these mortgages on the grounds that considerable equity money would have to be invested, with not very exciting profits in prospect in relation to other possible avenues of investment.

They claim that very large amounts of mortgages would have to be bought to make such an operation worthwhile. Most of the money from the mortgages would have to go to pay for servicing costs and pay an attractive enough return on the notes or debentures issued, leaving very little for the owners of the company. The repayment by homeowners of part or all of the mortgages early also would involve additional costs of administration, they contend.

In this connection, the issuance of serial debentures by municipalities—in the interests of automatic debt management—and the resultant multiplicity of interest rates and maturities, has reduced the market for municipal debentures, they point out. Such securities are largely in the hands of institutional investors in most areas, as a result.

The problems of getting the mortgages into the hands of a broader investing public are obviously considerable. But good secondary markets have been developed in the U. S. in this field. And U. S. investors are known to be interested in getting into the field here.

Not only would such a market in Canada release new funds for housing construction, but it would add a new line to those the dealers now have for sale. It might also lead to lower financing costs for the homeowner, to the extent that the broader demand for mortgages and greater marketability kept interest rates down.

• • •

Expect $190 Million In Uranium Financing

An additional $190 million will have to be raised to finance the uranium mining companies which now have contract applications in process, W. J. Bennett, president of Atomic Energy of Canada Ltd., said last week.

Approximately $100 million has been furnished by investment houses already, and the major part of this has come from Canadian firms.

Special price contracts have been written for a total value of about $700 million so far, and the total is expected to exceed $1,250 million when present contract negotiations have been completed.

Capital expenditures for plant, equipment, machinery, housing, power lines, roads, etc., will total $270 million; expenditures on diamond drilling, shaft sinking and mine preparation, $57 million; and operating expenditures during the period of the contracts, $863 million (roughly half for wages and salaries). Gross value of uranium sales when all mines are in production. $300 million annually.

Direct employment for 13,000 and many others in supporting industries is predicted.

Dividend Changes

TRANS CANADA CORP. FUND — Common, 25c payable July 1 to holders of record June 15, ex-dividend June 13. Initial payment. Recent price: $6.10.

DOMINION SQUARE CORP. — Common, dividend normally payable July 16 deferred. Previously paid regularly quarterly at annual rate of $4 plus $1 extra in 1955 and 1954.

CONS. MINING & SMELTING CO. — Common, 40c plus 40c payable July 16 to holders of record June 22, ex-dividend June 20. Previously paid extra of 55c Jan. 16. Total extras in 1955, 75c. Recent price: $32⅞.

P. L. ROBERTSON MFG. CO. — $1 pref., 25c plus 15c participating, payable July 1 to holders of record June 20, ex-dividend June 18. Previously paid participating dividend of 13c on July 1, 1955. Recent price: $21.

SUPERTEST PETROLEUM CORP. — New common, 4c payable July 15 to holders of record June 21, ex-dividend June 19. First semi-annual payment following 10-for-1 stock split Mar. 1. Previously paid 40c regularly semi-annually. Recent price: $30.

CANADIAN INTERNATIONAL TRUSTEE SHARES — Original common, 23.718c; modified common, 25.561c; paid June 4. Final distribution on surrender of certificates following termination of trust agreement Dec. 31, 1955.

BRALORNE MINES — Common, 10c plus 5c payable July 19 to holders of record June 28, ex-dividend June 26. Previously paid 10c plus 5c on Apr. 19. Total paid in 1955, 10c plus 5c. Recent price: $5.30.

Penmans Proxy Fight Ends Unknown Buyer Bows Out

The fight for control of Penmans Ltd., (FP, June 9, 2) has ended with a quiet letter to shareholders from the Montreal Trust Co.

An unknown buyer offered, early in May, $26 for common shares and $125 for preferred. The letter last week, formally withdrew his offer and arranged for the return of certificates deposited on his behalf with Montreal Trust. (Before the offer, shares stood at $23; after the offer they jumped to $25½; currently at $24).

While the buyer failed to gain control of the company, his offer sparked a sharp reaction from Penmans' management headed by George W. Grier, president. Not only did the board of directors refuse to endorse the offer, it actively discouraged shareholders from accepting and canvassed for proxies in its favor to support its stand should a special meeting take place.

When making his offer, the unnamed buyer set June 1 as a time limit for the depositing of 90% of the outstanding preferred shares and 90% of the outstanding common. He kept at his discretion the power to extend the deposit deadline. Stock certificates deposited with his agent, Montreal Trust Co., were not at June 1 numerous enough to meet the conditions of his offer, and he did not extend the deadline in the hope of obtaining more certificates.

Now the Montreal Trust Co. has written on the would-be buyer's behalf to all common and preferred shareholders of Penmans Ltd.: "If you surrender to us the bearer deposit receipt which was issued to you upon the deposit (of certificates) by you we will return the certificates so deposited."

In a door-to-door search for proxies, Penmans Ltd. claimed to obtain enough to represent 60% of all outstanding shares. Penmans' management stated that the offer for the common was only the present market value of the shares which amounted to less than the liquid assets of the company. Thus, said management, the offer would not be in the interests of the shareholders and it would be difficult to visualize what eventual benefits the offer could hold for the future of the company.

Tor.-Dominion Bank Dividend

Toronto - Dominion Bank announced this week a quarterly dividend of 32½c per share on the capital stock of the bank payable August 1, 1956 to shareholders of record June 29, 1956. Dividend is for the quarter ending July 31, 1956.

Shares subscribed for under the recent offering at $32 per share (FP May 19, 1956) and paid for before June 29, 1956 will qualify for the August 1 dividend. While a full dividend will be paid on fully-paid-for new shares, persons owning a partly-paid-for share will receive a dividend only in proportion to the amounts of subscription payments in the hands of the bank on or before June 29.

KERNAGHAN & CO. LIMITED

Members: The Investment Dealers' Association of Canada
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The Royal Bank of Canada

—Expiry date of "Rights" is June 29th

Holders of these valuable "Rights" are reminded that it is necessary to take action in regard to them by the expiry date of June 29th. The "Rights" may be used to subscribe for capital stock on the basis of one share at $36.00 for each five shares held; or they may be sold at the current market price.

Investors not now holding "Rights" and wishing to purchase The Royal Bank of Canada shares may secure the "Rights" through any of our offices and thus subscribe for the new issue of Capital Stock on the same basis as present shareholders.

One very important feature of these "Rights" is that they enable holders to pay for shares in 10 instalments at $3.60 per share beginning June 29th, 1956 and ending April 8th, 1957.

Particulars of this share offering will be sent upon request.

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ANNOUNCEMENT

T. K. BIRSS, P.Eng. V. E. ELLIS, P.Eng.

Mr. A. Nearingburg, General Sales Manager, Sheldons Engineering Limited, announces the appointment of T. K. Birss, P.Eng., as Manager of the company's Montreal operations. Mr. Birss formerly served as London Sales Manager and latterly in this same capacity in the Toronto area.

The appointment of Mr. V. E. Ellis, P.Eng., as Toronto District Manager is also announced. Mr. Ellis is well known throughout the Toronto area and in Northern Ontario, having represented Sheldons Engineering Ltd., as a Sales Engineer of the Toronto Branch for many years.

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(CP-2)

Anyway It's a Nice Thought

The Income Tax Act is not a law of nature. It can be repealed like any other statute. Probably no finance minister allows himself to imagine what life would be like without it. The public would be as astonished by its disappearance as by the abolition of cricket in England or bullfights in Spain. Yet it is not indispensable, according to T. Coleman Andrews.

As United States commissioner of internal revenue, 1953-55, Mr. Andrews ranks as an expert. Having left the public service for private busines, he is free now to air the opinions he formed while collecting $180 billion from Americans. He does not propose ditching the income tax now; but he thinks the Treasury could do without it in its present form. He refuses to believe that Washington suddenly discovered an irreplaceable fiscal gadget when it first imposed income tax in 1913.

The real reason for the popularity of income tax among public financiers is, of course, that it raises vast sums at the cost of relatively few votes. But the tax gatherers call it "enlightened" because, they say, it is easy to understand, cheap to collect and fair in its incidence on ability to pay.

This theory has made the tax respectable despite its raffish ancestry. Karl Marx, in the Communist manifesto, recommended it highly as a sure method of destroying private property and free enterprise. As long ago as 1888 the late Bernard Shaw, a self-advertised Communist to his dying day, rejoiced that Britain was "already far on the road" to socialism — because the British income tax, though at only a few pence in the pound, was well established.

Mr. Andrews argues that the American tax, rising to 91%, now amounts to confiscation; which means that it has gone some distance toward producing the result Marx foresaw. It no longer has the classic virtues claimed for it, Mr. Andrews says. It has become unfathomably hard to understand. A growing army of accountants is needed to figure it out, another growing army of inspectors to collect it. The socially fair ability-to-pay formula has degenerated into the purely vengeful and anti-social slogan, "soak the rich."

Canada's income tax began in 1917 as a war measure; but its yield was insignificant until the fighting was over. This means that, without income tax, Canada bought the West, built the CPR and financed its effort in the First World War. (It is unnerving to think what would be the present-day cost of the first two items.) In the late 1920s Ottawa seemed disposed to discard the income tax. Yield fell to about $50,000,000 a year (ah, those good days!). In 1927 the married man with $10,000 a year paid $290. This year he pays $1,500.

Of course the public demand for spending, especially on defense and "social security," is far greater now than thirty years ago; and there is little chance that this demand will slacken soon. The particular question raised by Mr. Andrews is whether, given a more or less fixed national budget, a present-day government can find a fairer way of paying the bill than a confiscatory income tax.

Mr. Andrews thinks the U. S. Government can. Its present levy on income yields about $52 billion a year. Estimated yield from a 10% turnover tax on all American transactions is $45 billion; from a 10% income tax without exemptions of any kind, $24 billion. Comparable figures for Canada would be interesting.

It is, of course, a moot point whether these statistics, or any statistics, would induce the Government even to consider repeal or a drastic overhaul of the tax. Governments defend their taxes like mother bears defending their cubs. Cases of abandoned taxes are rare indeed.

Perhaps the real interest of Mr. Andrews' statement is that he thought of making it at all. He has at least reminded us that no tax is sacrosanct. No matter how fruitful, long-accepted or apparently equitable it may be, a tax is only a device that can be thrown away or remodeled. And, to propound a new law of dynamics, the inertia of an unfair tax is equal to the inertia of the people who pay it.

Let's Finish This Job

It may come as a shock to many Canadians to learn that though the war ended eleven years ago there is still a refugee problem in Western Europe. About 250,000 people, under the protection of the United Nations, are still living in drab, comfortless camps, without jobs, homes or a country they can call their own.

This block of human misery represents the hard core of the millions of people uprooted by the war or its political aftermath. With UN sponsorship most of these were re-settled without too much delay. Some migrated to Canada, Australia, South America and other "new" countries. Others were absorbed by the countries to which they had fled, if of the same racial stock. West Germany, for example, took the bulk of the refugees from East Germany.

But this still left several hundred thousand who either had no particular claim on their temporary hosts or, for one reason or another, could not or did not wish to emigrate.

Now a plan has been worked out to bring these remaining refugees back to useful work and a normal relationship with their fellow men. Most of the countries where their camps are located are now able, and have agreed, to accept them as citizens if UN helps to get them established.

To provide the training, housing, working capital, loans and other assistance that is necessary, UN has set up a special fund to be known as UNREF. Generous Canadians can help in this practical and necessary work by sending donations to local branches of the United Nations Association. UNREF is long overdue. It makes a claim on prudence as well as common humanity; for the discontents that are bred in refugee camps can be a danger to the world's peace.

She Managed to Survive

Some Canadians regard the vision of an industrial Canada as a mere pipe dream, and dismiss as wasted any efforts to reduce our dependence on exports of raw materials by encouraging the development of manufacturing in this country.

They might take note of this remark, recorded in the British parliamentary Hansard on February 18, 1830:

"America has had the weakness to deprive herself of the advantages nature bestowed upon her and instead of laboring to increase the export of her raw produce, weakly endeavors to become a manufacturing country."

Those endeavors don't seem so weak in 1956.

The Problem Bigger Than the Town

An Ontario town, which a few years ago was a comfortable and well balanced place in which to live, is now suffering acutely from growing pains.

Houses have been spawning like mushrooms on new subdivisions but not factories and other business establishments that would provide employment and tax revenue.

What has been created so far is largely a bedroom town, a place where the wage earner comes home at night to sleep but leaves next morning for his job perhaps 25 miles away.

As a result of this one-sided development, the local municipal authorities are up against grave financial problems. They have had to provide new streets, and water and sewerage services. They have had to double their police and fire forces. More expensive still, they have had to build, equip and staff several new schools.

The whole burden for all this new expenditure so far falls on what is almost entirely residential property. There is little or no new industry to share the load.

In desperation the town council has passed a by-law which strictly limits all new subdivisions to so much residential and so much industrial, and each subdivision will have to be completed before a new one is permitted to start. It won't make any difference whether such an area is best suited to one or the other type of construction, it will have to be both. The result will certainly be a hodgepodge of factories and houses, neither convenient for industry nor comfortable for living.

One can't blame the town authorities too much for this shortsighted decision. The problem they face is far bigger than their town or any town.

With a few luxurious exceptions like Westmount in Montreal, Forest Hill Village in Toronto or Shaughnessy Heights, in Vancouver, purely residential areas haven't enough tax renevue to support themselves. Under the present set-up they are forced to bid for industry and if they are small that means mixing factories and homes and office buildings and sacrificing open spaces.

If we are to have homes and industry placed to the best advantage, there must be zoning on a very much wider scale. Equally important there must be a much wider pooling of property tax revenues, perhaps even on a provincial scale, as has been suggested before the Gordon Commission.

Trade Facts for the U.S.

Prospects for a more realistic American tariff and trade policy will be brighter if a plan now under discussion in the U. S. Department of Commerce is carried into effect.

The New York Times reports that Commerce Secretary Sinclair Weekes may initiate the first statistical study of the value of foreign trade to the individual cities, states, and areas in the United States. Facts sought would include: the number of people directly or indirectly dependent for their income on export and import trade; the origins and ultimate destinations of every type of raw, semi-finished and finished goods entering into export. These facts have never been available for Congressional Committees, the Tariff Commission, and the various departments of government interested in promoting sound trade and commercial policy for the United States.

Because these figures are lacking, arguments for liberal trade policy have to be made on a broad national basis; but the laws of trade are passed by Congressmen who have to deal with local interests — vocal, well organized local interests.

Getting these facts will cost between $5 million and $10 million. Keeping them up to date would be a minor chore with a modest price tag.

If the Department of Commerce goes ahead with the study, America's trading partners will take it as concrete evidence of a real desire to promote international trade.

How Effective Credit Curbs?

Charge and installment sales were half a billion dollars higher in the first quarter of 1956 than they were during the same period of 1955. This obviously doesn't mean that the steady increase in interest rates has failed in its purpose. The most stringent credit-curbing acts took place too late to affect first-quarter figures.

The facts now revealed do, however, confirm the need for those actions. Charge account sales of $3 billions and installment sales of over $1.6 billions are hard for the economy to digest.

The question now is: How effective are fiscal controls in slowing installment buying in an economy with (1) full employment and (2) the expectation of inflation? Interest rates seem to be a secondary consideration to a consumer with a steady income who fears that the price of an article will rise unless he buys it before he has saved the necessary cash.

The general effect of the credit squeeze may eventually convince the consumer that price rises won't take place and he might hold off for a while and buy for cash. But it seems likely that the last people to react to the drive to mop up inflation will be the installment buyers —the very group that is causing the Government the most concern.

"Lonely Money"

"Risk pay" for dangerous jobs is familiar. "Lonely money" is a new idea. It's a new expression too unless it has been used by lighthouse keepers or Baffinland postal clerks.

English workers asking for "lonely money" are not so far off the beaten track. Automation has been introduced, in a mild form, in their plant. As a result, some of them are all alone in charge of big machines with nobody to talk to. Hence their request for extra pay.

It suggests interesting possibilities. Why not gregarious pay for those who have to work with a lot of other people, claustrophobia pay for workers within four walls, agoraphobia pay for workers in fields? Ingenious but too complicated to administer. The really constructive approach might be to put men who enjoy solitude in those lonely jobs. Or would this be unfair?

Napier Moore's Scratch Pad

A WEEK AGO Tuesday was Moore's Parliamentary Day in London.

After lunching with Sir Beverley Baxter, Canadian-born journalist and veteran MP, we sped to the House of Commons for Question Time, when the Chancellor of the Exchequer, Harold Macmillan, was expected to make a statement concerning the matter which has caused more interest and controversy in England than the Test cricket matches — the offer of the Texas Oil Co. of America to buy control of the British-owned Trinidad Oil Co. Bax was hoping to pop a question.

Mr. Macmillan didn't come through that day. He said that the matter was most complicated and required much careful consideration; that he would make a statement "shortly."

The Socialists wanted to know if the Chancellor had offered to lease his "plateau of stability" to the Texas Oil Company. He said, "No. I think that will be so fruitful that I would prefer to keep it in England."

It was the first time I had been in the new Commons chamber. Just a little odd to see the constellations of microphones above the benches, but the acoustics are extremely good.

And extremely impressive is the expeditious manner in which Question Time is handled. That day 96 questions were put and answered in exactly one hour.

It happened to be Sir Anthony Eden's birthday. Casual reference was made to it by an Opposition speaker. There was no thumping of desks because there aren't any desks in the British House. And, unlike the Canadian custom, no red roses to greet the Prime Minister when he took his seat.

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DURING THE DEBATE on the Finance Bill, I stole across to the House of Lords where a score or so of peers were debating parking problems, traffic control and accidents caused by dogs. Two or three of the more aged noble lords were sitting with what looked like old-fashioned telephone receivers glued to their ears. One was fast asleep. But those who spoke did so fluently and clearly, and with a lot of sound common sense. Came a surprise when, with a Scottish accent, Lord Mather said he was in a position to speak objectively about motor cars because he didn't possess one. He spoke rather nostalgically of the days when streets and highways weren't jammed with "sparrow starvers."

• • •

FROM THE LORDS to a pleasant cocktail party given by the Canadian High Commissioner and Mrs. Norman Robertson, there to run into Alice Miller, who for many years was confidential secretary to Canada's Premier R. B. Bennett, and who now, in retirement, dwells in Victoria, B.C. So long since our last meeting that we mutually agreed not to mention it.

Then back to the House of Commons to dine with Bax (the meal being interrupted by the division bell). And who should be in the visitors' dining room but Simon J. Vos, chairman of the Trinidad Oil Company, looking fairly optimistic.

• • •

WM. H. GANDER, of Transcona, Manitoba, has sent me a mass of interesting information concerning that phenomenal fiction detective, Sexton Blake, to whose longevity this column referred a week or two ago, provoking a number of enquiries. The first Sexton Blake story, written by Harry Blythe, appeared in The Marvel, an English boys' paper, on December 20, 1893. Thereafter, over a period of 46 years, 14 other publications ran stories featuring the same hero. More than 100 authors have contributed to the Sexton Blake Saga. There's a Sexton Blake Library, a monthly started in 1915 and still running (Mr. Gander sent a copy). There's a double-page Sexton Blake picture thriller in every issue of a "comic" called "Knockout." There's a Sexton Blake Circle, somewhat similar to The Baker Street Irregulars, worshippers of Sherlock Holmes.

Mr. Gander himself puts out an amateur magazine called The Story Paper Collector.

Incidentally, Sexton Blake is now going to appear on British television.

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IN THE LATER YEARS of his life, Sir Arthur Conan Doyle, the creator of Sherlock Holmes, became interested in spiritualism. Twenty-six years ago there was launched in England a Conan Doyle memorial fund. Object was to raise $280,000 for the endowment of an institution that would be a "focal point for spiritualism and psychical research." During the quarter century the fund has only amounted to some $6,278. The other day the courts ruled that the donations should be returned to the subscribers.

Counsel for the subscribers suggested that the appeal had failed because the emphasis had been on spiritualism and not on Sherlock Holmes. Mr. Justice Harman said, "Conan Doyle never regarded Sherlock Holmes as very important. He was heartily sick of him and could hardly be induced to write another story . . . If there had been an appeal to buy a house in Baker Street and equip it in the proper way, there would have been an enormous response."

Stop Me If . . .

A psychiatric board was testing the mentality of a recruit. "Do you ever hear voices without being able to tell where the voices come from?" he was asked.

"Yes, sir." "And when does this occur?" "When I answer the telephone."

• • •

The father entered the room just as the children were starting a free-for-all.

"See here, Johnny," said the father grabbing one of the youngsters, "Who started this?"

"Well," said Johnny, "It's all Freddy's fault, he started it when he hit me back."

SPEEDY GROWTH

Post Scripts

Chemical Institute Head

Clifford B. Purves is the new president of the Chemical Institute of Canada. He was elected to the top position at the 39th annual conference of the Institute in Montreal last month.

Dr. Purves is E. B. Eddy professor of industrial and cellulose chemistry at McGill University and chief, woods chemistry division, of the Pulp and Paper Institute of Canada.

Born in Scotland, Purves graduated in chemistry from the University of St. Andrews where he also did research work in the methylated sugar field under Sir James Irvine and received his Ph.D. degree. From 1926-29 he was a Commonwealth Fund Fellow attached to the Polarimetric Division of the U. S. Bureau of Standards, Washington, D.C. While there he did research on sugar glycosides. From 1929-31 he was a research assistant in the Department of Physiology at Marischal College, Aberdeen, where he did research work on the metabolism of carbohydrates.

In 1931 Purves returned to the United States as a Chemical Foundation of New York Research associate and gained further experience in the sugar field. From 1936 to 1943 he was an associate professor of organic chemistry at the Massachusetts Institute of Technology where his special interest was the supervision of Ph.D. thesis research in the cellulose and wood chemistry fields. His present duties at McGill University centre about the same interest and are carried out in association with the Pulp and Paper Research Institute of Canada.

Dr. Purves received the honorary degree of Doctor of Science from Lawrence College, Appleton, Wisconsin, in 1944.

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Forestry Researcher

John L. Farrar is the first holder of the Abitibi professorship of forest biology at the University of Toronto. To take the newly created chair, he is leaving a career in the federal government's forest research service, dating back to 1937.

MR. FARRAR

Research will, however, still be the first of Dr. Farrar's pursuits, when he joins the faculty of Toronto's School of Forestry. There, in addition to giving postgraduate and a few undergraduate courses, he will undertake research in silviculture — the study of trees; the light, heat and nutrients they require; the environment they thrive on and the unfavorable conditions they will tolerate.

Raised in the shadow of the Hamilton, Ont., mountain, Farrar learned to love the outdoors and plant life as a boy. When at 18 he won a scholarship on leaving high school in 1932, his choice was forestry at the University of Toronto.

Four years and two more scholarships later, he was graduated and left for a year's work in the woods of central Quebec for Canadian International Paper Co. Farrar spent the 1936-37 winter with a "timber cruising party, sleeping at night in a tent despite temperatures which were often well below zero.

In 1937, he joined the Forestry Branch at Ottawa, doing silvicultural research on a full-time basis. As an undergraduate, he had worked two summers for the same branch.

From 1941 to 1945, Farrar served with the RCAF, on loan to the RAF, as a radar officer in Egypt, Lybia and Palestine. His training in the fast-growing science of radar proved unexpectedly valuable when he resumed his work in the Forestry Branch after the war, since instruments based on the same principles had been developed for forestry research.

Farrar has obtained two postgraduate degrees at Yale, one of the world's foremost centres of forestry research. In 1939, he won the degree Master of Forestry cum laude, with a thesis on the vegetative propagation of trees. Last year, he received his doctorate after submitting a dissertation on water relations of trees.

Mrs. Farrar is the former Betty Joan May of Woking, Surrey. Besides being avid bridge players, the Farrars have been taking up square-dancing — one of official Ottawa's favorite pastimes.

John Farrar is a member of several professional societies, including the Canadian Institute of Forestry and the American Association for the Advancement of Science.

• • •

Board of Trade Head

Robert Lionel Dunsmore, president of Champlain Oil Products Ltd., has been elected president of the Montreal Board of Trade. He succeeds S. M. Finlayson.

MR. DUNSMORE

Dunsmore has been Champlain's president since 1949. Prior to that he was engaged in the manufacturing end of the oil business in Canada and South America for 30 years.

Born in Seaforth, Ont., Dunsmore received his early education in St. Thomas, Ont., later attending Queen's University at Kingston, where he graduated in civil engineering.

During World War I he served with the Corps of Canadian Engineers and was awarded the Military Cross. In the second World War he was director of fuel for the Royal Canadian Navy.

He is also vice-president of the Engineering Institute of Canada.

Tennis is among Mr. Dunsmore's chief sports and recreations.

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Textile Spokesman

A textile man for more than 20 years, Gerald Louis Bruck, president of Bruck Mills, heads the Silk & Rayon Institute for 1956-57. He succeeds Brinley Taylor, vice-president Courtaulds (Canada).

MR. BRUCK

Born in New York in 1915, Bruck received his early education there, later attending the University of Virginia where he graduated with a Bachelor of Science and Commerce.

On graduation he worked in New York for a short while, "hefting piece goods in basements," as he puts it, which marked the start of his career in the textile industry. Shortly after he joined the firm started by his father, Isaac I. Bruck, in Cowansville, Que. This was in 1921. With the exception of four years spent in the Royal Canadian Air Force, he has been continuously associated with Bruck Mills.

On the death of his father in 1949, he became president of the firm.

Painting, boating, skiing and coin collecting are among his hobbies and recreations. In paintings he favors the "impressionist" school and Roman coins are his specialty.

He is married, has two sons, and makes his home in Westmount.

What Others Are Saying

Editorial of the Week

They're Catching Up

Wingham (Ont.) Advance Times

People in the big city have been wont to picture life in the small town as a peaceful, somnolent existence with no hustle and bustle, no excitement, nowhere to go and nothing to do but stay home and tend the garden or mow the lawn. Most of them seem to figure that small town life has none of the attributes of city living which cause jangled nerves, frayed tempers and nervous disorders of the stomach.

Things are changing, however. Right now there are a few people who never seem to be able to spend an evening at home. What with lodge, church work, golf and service clubs, they never seem to make it. More and more people are getting into the position where supper is just a momentary pause in a round which goes from early morning to late at night.

The over-organized social life of small towns has long been blamed for absentee husbands and wives. Add to this such modern means of transportation as the family sedan and you have a pace of living which is getting to be just about as frantic as that of the city. For while most city people confine their motor trips to the week-end, town people seem to think nothing of taking off on a hundred mile jaunt after supper.

Life everywhere is going at a faster clip than it was 25 years ago. Small towns are apt to be somewhat behind the times in this matter, as they may be in some others, but they're catching up fast.

Other People's Views

THE PARLIAMENTARY SYSTEM hinges on the speaker, argues the **Victoria Colonist,** "and the instinctive respect that this office commands. The position should therefore be put beyond the party level by a degree of permanence that permits no suspicion of wilful error. A Speaker in the Commons should be as assured of his unquestioned authority as a chief justice is in court chambers."

NO RESPONSIBLE STATESMAN is advocating an expansion of money at a time when it is at least equal to the supply of goods, asserts the **Victoria Times,** which adds, "In Canada anyway, Mr. Bennett and his followers stand alone in demanding an inflationary policy when inflation is our greatest danger."

NO ONE WOULD WISH TO SEE the currency of the Canada Medal depreciated by a wholesale handout every year, says the **London Free Press.** "It should be conferred with great caution and only after careful thought. But no award, not one Canada Medal in the dozen years since it was created is carrying caution to the point of absurdity."

THE FARMER is a businessman whether he regards himself as such or not, says the **Shelburne (Ont.) Free Press and Economist.** "If he wishes to put his business on a sounder basis, he must accordingly take his cue from business men who have successfully improved their economic positions. On top of that, the farmer, besides being in the business of producing, is also in the business of selling. It is his sales department which is important today."

MORE COMPETITION for Canadian tobacco is seen by the **Simcoe (Ont.) Reformer** which warns: "Under these conditions, Marketing Board officials might well give serious consideration to sending a qualified sales representative to visit Britain and European countries such as West Germany. Otherwise there is no assurance that Canada will not lose out in the race for the overseas tobacco market and that its growers will not become almost wholly dependent on domestic consumption. Any further expansion of the flue-cured industry in the face of existing conditions would seem foolhardy."

The Financial Post

Member Audit Bureau of Circulations
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Subscription — Single copies 20c. Yearly in Canada $6 (two years, $11); all other countries $7 (two years $13).

Advertising Rates: Single insertion $8.40 per column inch. Contract rates upon request.

Authorized as second-class mail, Post Office, Ottawa.

Indexed by The Canadian Index of The Canadian Library Association published monthly and cumulative annually.

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Published and Printed by
MACLEAN-HUNTER PUBLISHING COMPANY LIMITED
TORONTO 2: 481 University Avenue, EMpire 3-5981.
MONTREAL 2: 1242 Peel St., UNiversity 6-9841.

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OTHER SERVICES: Canadian Press Clipping Service, Commercial Printing Division. National List of Advertisers.

MACLEAN-HUNTER LIMITED
LONDON: Wellington House, 125 Strand, London W.C.2. Cable Atabek; Temple Bar 1616.

MACLEAN-HUNTER PUBLISHING CORPORATION
NEW YORK 36: 522 Fifth Ave., Murray Hill 2-7868.
CHICAGO 3: 79 West Monroe St.; Randolph 6-2805.

Representative
DUNCAN A. SCOTT & CO.
LOS ANGELES 5: 2978 Wilshire Blvd., DUnkirk 8-4158.
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June 23, 1956

Business Chiefs Go Back to College; Research Stressed in Queen's U. Talks

36 Top Executives Hear Lectures on Economic Trends; Rapidity of Change in Products and Processes Noted

By J. B. McGEACHY

One thing certain about life on this planet in the next 25 years or so is that it won't be dull. Only low-grade morons and people serving life sentences will fail to find it interesting. It may end with a bang or lead to the nightmare state of George Orwell's 1984, depending on the unpredictable behavior of man as a political animal. Whatever happens politically, economic man (another abstraction but no less real on that account) is going to experience change at a rate not seen before.

As a consumer or a worker in the usual sense of the word, he does not need to worry about this outlook. He can sit back and take what comes, in the way of thin, to do and things to buy. He may be the master of his fate and the captain of his soul in a poetical sense but the economic shape of things to come won't depend greatly on him, or not on his purposeful judgments anyway.

The New "Market"

Among the minority of people who will make the purposeful judgments the business chief is important. He has always had to study the market; but in the past the word has meant something relatively narrow like the stock exchange or the demand for button boots. From now on the top executive has to look at the market as the sum total of human transactions. His particular line is sure to be profoundly affected by economic events happening away outside his own business bailiwick.

J. B. McGEACHY

To "grasp this sorry scheme of things entire and mold it nearer to the heart's desire" was Omar Khayam's idea of a desirable experience. Substitute "exciting" for "sorry" and you have the creative businessman's design for living. He has to grasp the economic scheme of things entire if he can; and this is a difficult trick.

There is now a thing called, to the distress of all good etymologists, automation; which does not merely mean machines looking after machines but a kind of integration of the whole economic process from raw material to breakfast table or garage. There is a thing called the computer or mechanical brain which can do sums in a minute that would take a man a year. There is a disturbance called nuclear energy, with unheard-of capacity to change the world.

Inventions are no longer produced by solo types in garrets or even by solo types like Edison, who operate in the marble halls of the rich. They are mass-produced every hour on the hour in an assembly line manned by battalions of Ph.Ds. Finally there is propaganda, including advertisement. It is nothing new; but the scale on which it can now be practised and the psychological necromancy that now informs it are so new, so peculiar to this age, that propaganda as we know it can rightly be called a recent invention.

To The Ivory Towers

If you add up the impact of all these phenomena, you get a totality which not many people can even see clearly, let alone analyse. Yet get a market so complicated in its possibilities that Einstein might boggle at trying to find the equation. This is why men of business make pilgrimages to the ivory towers and consult the professors, theoreticians and philosophers of the market, the people who only have to meditate about it. It is something like consultation of the soothsayers by our remote ancestors, except that these modern soothsayers don't go by the entrails of birds or utter mumbo jumbo.

Last week at Queen's University, in the leafy and pleasant city of Kingston, thirty-six of Canada's leading executives sat at the feet of about a dozen experts in finance, economics, research and management. They were housed and fed in a college residence. They had a timetable more exacting than the average university student would care to endure. To this observer, who was fortunate in catching a part of the program, they appeared to enjoy it. What they get from it will depend, of course, on their reflections, and resultant action, in the next six months or years.

They were presidents, vice-presidents, general managers and others of like rank, youngish men chosen because they are likely to carry their responsibilities for a decade or longer. It was interesting to see so many tycoons in one room and to try to discover if there is any conformity to type. But the only general statement that can be made is that they look nothing like anybody's cartoon of a businessman.

No Conformity to Type

They do not wear watch chains. They smoke cigarettes, not cigars. They do not look hungry but they are certainly lean. Far from being complacent, they ask questions that suggest both admission of imperfections and eagerness to learn.

It would be beyond my powers to summarize (except in a series of small points as succinct but useless as hailstones) all that was said. Here are only a few gleanings from talk at the conference and from papers given by the attending pundits, chiefly from those dealing with research.

In a way, research was the keynote. This point was emphasized from all sides: that a business which assumes that its present products will be in demand forever, that its sources of energy and manufacturing techniques will remain constant, that its present marketing methods will be effective for an indefinite period, is probably a doomed business. Not necessarily next year or in 1966 but sooner or later it will go on the scrap heap. If it wants to live and flourish, it must be constantly on the lookout for new products, processes, ways of selling; and the lookout man is the researcher on assignment to find these novelties.

Discussions were based on the assumption that Canada will grow in population and wealth. This was documented and qualified by such brilliant minds as Graham Towers, formerly Governor of the Bank of Canada, who spoke with a banker's modified optimism; Peter Drucker of New York, an economic consultant who is also an incandescent personality; John Deutsch, the Canadian economist; Herbert H. Lank, head of the Du Pont Company of Canada; Principal W. A. Mackintosh of Queen's and others.

Shortages Expected

Here is a melange of assorted ideas thrown into the melting pot. Canada is going to experience a shortage of capital and of men trained for executive jobs and possibly men trained for research. One of the unexpected developments in Canada (this from Mr. Drucker) will be a business spurt in the Maritime Provinces, based on the refining of foreign petroleum to be shipped in tankers up the St. Lawrence and on plastic and chemical industries deriving their energy from coal.

There should be a deliberate policy (this was a widespread opinion) designed to encourage ownership of Canada's equity debt in Canada, and of its funded debt abroad; in other words, Canadians should provide the funds for new industrial works, outsiders should be asked for the funds to finance public undertakings. There is an imbalance in Canada between primary and secondary industries; and policy (again a general view) should encourage the growth of manufacturing. In other words, we should process more of our raw materials before selling them — an opinion contrary to the doctrine that hewing wood and drawing water are Canada's best bet.

The power of advertising (this was how at least some conferees reacted to exponents of the theme) is now almost alarming. Advertisers know so much about the consumer, his frailties and appetites, that he is almost helpless before their blandishments. Note was also taken of the capture of huge slices of business by astronomic spending on advertisement. For example, one quarter of the total American toothpaste market was quickly taken by an $18-million publicity campaign for a new brand. Query: Could one firm collar all the business by spending $72 million?

Research is Stressed

No pattern can be imposed on these variegated thoughts, but there was a clear pattern in what was said about research. Here the guides of the conference were Dr. C. Jack Mackenzie, head of the Atomic Energy Control Board; Dr. E. W. R. Steacie, director of the National Research Council; Dr. W. B. Lewis of the atomic energy plant at Chalk River; and Dr. R. S. Jane, a scientist who has become president of Shawinigan Chemicals — a formidable group of learned doctors.

Canada is a laggard in research. Government spending under this head, measured per capita, is now nearly a match for government spending in the United States and Britain. Spending by Canadian industry for the same purpose is away below the American or British level.

There are reasons for this backwardness. One is that research is expensive and most Canadian industrial firms are comparatively small. A more important fact is that many Canadian plants are branches of American industry and have their research done for them in the parent laboratories south of the line.

This is a satisfactory arrangement so far as it goes, often quite profitable, but it has drawbacks. It means that this country is, generally speaking, five years behind the United States in technical information; presumably because knowledge takes time to trickle northward and because specifically Canadian technical problems have to wait their turn to be investigated.

If Canada is not to remain a scientific colony of the United States (Dr. Steacie's phrase), Canadian companies have the remedy in their hands. A concern with 500 workers is about the minimum size for a research program of its own. About ten scientists and ten technicians are needed for a start. The cost for a project of this size would run $150,000 to $200,000 a year.

Research pays off. One company president told the conference that his firm now derives 60% of its income from inventions it developed in the depression years. If research had been stopped then to save money, the company would not exist today or would be much smaller than it is.

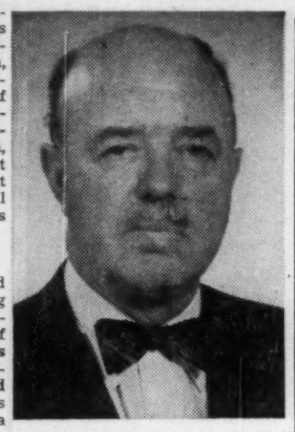
Lesson in Administration

This story must include some account of a contribution by Dr. Paul Pigors of the Massachusetts Institute of Technology. Speaking about human relations in industry, Dr. Pigors put the class through a test case, a seemingly minor problem in administration. A hospital nurse, a cooperative girl with a good record, has saved up three days off (though the rules say this should be discouraged). Without notice she asks for her regular day plus the three accumulated days (though the rules say that a week's notice of such requests must be given) so that she may visit her family in Vermont. No family emergency; she is just an affectionate girl who wants to see her people, not having visited them for six months. Should she be allowed to go?

It was interesting to find, when the executives were invited merely to recite the facts of the case, how difficult it is to make an objective summary, one that doesn't introduce a word (like unreasonable) indicating bias or a decision taken. Then it was interesting to find (after all the executives had written their answers and handed them in like schoolboys to the teacher) that some said "on no account" and others "why, certainly" with equal firmness.

Prof. Pigors' own solution: Relax. No need to try for a Napoleonic reputation by giving a quick reply. Discover first if a replacement for the nurse can be found. Then make a decision that balances good staff relations and the organization's need of discipline. Prof. Pigors put across the lesson with such verve and humor that many said: "You ought to be on TV."

All the men I talked to voted the conference a great success. Congratulations are due to Queen's, especially its school of commerce, and everyone else who had a hand in organizing it. It was an experiment, first of its kind in Canada, and may be repeated.



W. H. R. JARVIS

senior director of John Labatt Ltd., has been named president, succeeding Hugh F. Labatt who died March 31.

The Bank of Nova Scotia

The Bank of Nova Scotia has offered to the holders of its Capital Stock of record May 31, 1956, Rights to subscribe for additional shares of the Bank at an attractive price.

We believe that this is an opportune time to purchase shares of the Bank and for present shareholders to add to their holdings by the exercise of their Rights.

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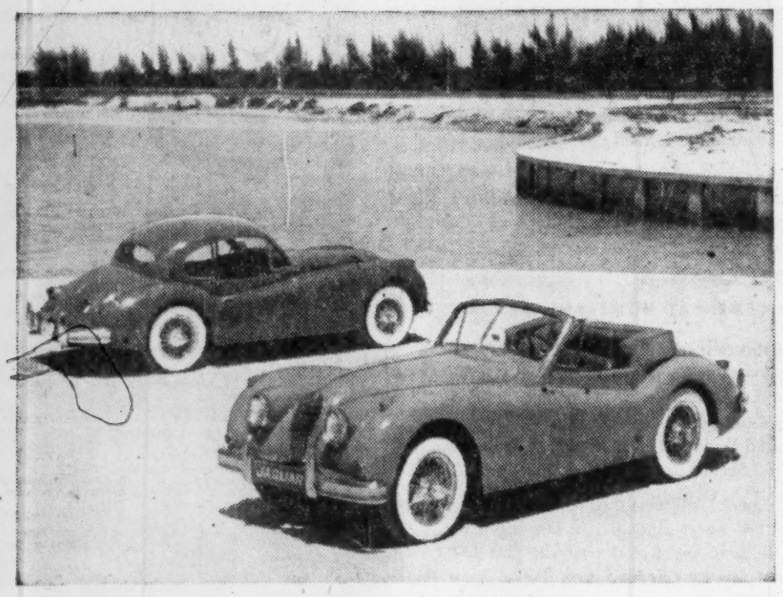

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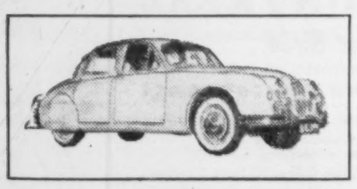
Now, with the introduction of effortless Borg-Warner automatic transmission in the XK-140 convertible and hardtop coupe, the joy of Jaguar ownership is open to an even greater number of fine car enthusiasts.

Naturally, the Jaguars—both convertible and coupe—are luxury cars in every sense of the word... boasting such Jaguar amenities as individually adjustable front seats, hand-fitted British glove leather upholstery, rubbed walnut paneling, roll-up windows and additional rear seating capacity. Why not ask your dealer now for a demonstration ride.



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Powered by a 2.4 litre version of the great "XK" engine, the TPF will whisk five passengers in salon luxury to over 100 mph, yet will deliver economy of 25 miles to the gallon at normal cruising speed. Typically Jaguar, with leather upholstery, walnut trim, roomy interior and capacious luggage space.

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Cotton Industry In May at Low Since Last July

MONTREAL (Staff)—Activity in the Canadian cotton textile industry last month hit the lowest level since July 1955.

During the month domestic mills opened 28,999 bales of raw cotton, down sharply from 33,818 bales in April and 33,239 bales in May of 1955.

Part of the decrease was accounted for by the strike—now settled—against four of Dominion Textile's mills.

The May bale opening figures represent the third consecutive monthly decrease this year. In February, openings of 34,232 bales was the highest level for the month since 1951.

Here are the comparative figures:

Bale Openings

	1956	1955
February ..	34,232	31,222
March	34,094	34,232
April	33,818	30,924
May	28,999	33,239

HOORAY FOR THURSDAY!

This young lady will probably never see the Woman's Globe and Mail (published every Thursday), though goings-on in her native Kashmir may well be reported in its columns.

The Globe and Mail is known as "Canada's National Newspaper" with good reason. The editors firmly believe that Canadians *are* interested in news . . . world news as well as local. They insist on regarding their readers as intelligent adults.

Other aspects of Globe and Mail policy are: News coverage in *depth* as well as breadth; reporting that is factual, honest and objective; editorial opinion that is informed and clearly stated; feature writing that is as interesting as it is provocative.

It is a policy that has paid off. It has placed The Globe and Mail in a position unique in the Canadian newspaper field. More, it has won for this newspaper a loyal following of readers whose calibre tends to place them in the forefront of affairs. It has worked to spread the influence of The Globe and Mail far beyond the bounds of its basic circulation of 240,000 families. Perhaps most important of all, from the point of view of its advertisers, Globe and Mail policy has created an atmosphere of trust between reader and newspaper that applies to the advertising carried as well as to editorial matter. Advertisers have found that this "extra" is good business.

The Globe and Mail
CANADA'S NATIONAL NEWSPAPER
TORONTO ONTARIO

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ANNOUNCEMENT

DONALD MANSON

Spence Caldwell, president of S. W. Caldwell Ltd., announces the appointment of Donald Manson as Director and special Ottawa consultant. Mr. Manson was formerly General Manager of the Canadian Broadcasting Corporation until his retirement in 1952.

Approximate Quotes

SUPERVISED FUNDS

		Bid	Asked
Supervised	Income Fund	$4.38	$4.42
"	Growth Fund	2.33	2.35
"	American Fund	5.93	5.99
(1955)	Executive Fund	35.58	
(1956)	Executive Fund	29.17	30.46

Further information from:

SUPERVISED INVESTMENTS LIMITED
360 St. James St. W., Montreal, P.Q.

Builders Organize For Credit Battle

(Continued from page 1)

tion arising. They say that current figures on housing starts do not indicate the real impact which loan restrictions are going to have.

The situation, however, is further confused because bad weather earlier this year is understood to have caused as much as a six-week lag in new housing starts, and the shortage of serviced lots in all the urban areas has further aggravated the situation.

Despite this, for the first five months of this year, housing starts across the country were about 6.5% ahead of last year. But there have been several black spots.

Metropolitan Toronto with an estimated 18% cut in starts below April, 1955, was one. Last month, starts were slightly up on the previous April, and the five-month period showed a cumulative drop of just under 5%.

Windsor, though still ahead on starts, took the lead in the present campaign against credit restrictions. The local house builders' association had reports from members that the banks were cutting donw on loans for farther housing starts.

When they began to make representations to federal government representatives, other local associations began wiring in complaints and the protest assumed national proportions.

Among those which joined in the protest were Ottawa, Winnipeg and Edmonton. In the West, NHBA Executive Vice-President John Caulfield Smith is now concluding a fact-finding tour which culminated last week when 15 western branches laid the credit problem on the table at an Edmonton conference.

These are some of the facts reported to that conference:

Vancouver — Building is outstrippipg municipal lot-servicing. With CMHC unable to back mortgages on semiserviced lots, financing under NHA is down 35% from last year. Borrowing from other sources is adequate, but means higher down payments and interest rates. Starts to May 31: 3,297 (3,711 last year).

Edmonton — Besides a general mortgage money shortage, serviced lots in the city are becoming scarce. City has been charged with land speculation, offering blocks of lots to a few builders, who then resell at bonus prices. Building may fall 1,000 under last year's 4,200 starts unless new financing gives suburban construction a spurt. Starts: 357 (405).

Regina — Bank mortgage lending curbs have cut starts to 222 from last year's 314. Possibility of some builders turning to U. S. investment funds to help finance commitments.

Calgary — Building booming, with plenty of serviced lots available. But May construction figures lower than last year, builders fear credit restriction may soon begin to pinch. Starts: 1,662 (1,133).

Saskatoon — Bank mortgages, which financed about 80% of house construction last year, now nearly nonexistent to builders, though some lending done on purchasers' applications. Other lending sources have helped building rise 40% from last year. Starts: 285 (205).

Winnipeg — Many builders in serious financial difficulties due to an early race for serviced lots and supplies, not equaled by adequate financing. Estimate starts may be down 25% this summer, 50% by year's end. Starts so far: 910 (938).

RUSSELL A. PROWSE

appointed president Garland-Blodgett Ltd. of Toronto, in charge of operations, continues as general manager.

Keep Your Eyes On . . .

KAISER

DEVELOPMENT CORP. LTD.

A Fast Rising Young Company On The Mining Horizon Reputed To Have The Largest Proven Nickel Deposit In The U. S. With Other Promising Properties In SUDBURY and LA RONGE

According to the latest geological report, the KAISER property at Mt. Vernon, Washington, which consists of 1132 acres, is reputed to have one of the largest nickel deposits in the United States. Approximately 6650 feet of drilling on this property has proven the presence of a large tonnage of commercial nickel in an area of 1000 ft. along the outcrop. Numerous trenches and open cuts that were made have established the continuity of nickel. There has been no point in the entire area drilled that has not shown the existence of nickel. The area drilled is relatively small when compared to the entire length of the deposit of 11,360 ft. There are other areas along the length of the deposit that from surface indications appear to be of even greater size and value. It is believed that deeper drilling will disclose sulphide ores of even higher values, because of the extensive oxidized zone from which much of the nickel has been leached. Preliminary metallurgical results indicate that satisfactory low cost recovery of the nickel can be easily obtained. The area is accessible for year-around continuous mining activity. An outstanding advantage that points to low cost operation is the choice of nearby water and rail shipment. Shipment by water is readily available at Puget Sound Port of Mt. Vernon while the Great Northern Railway passes two miles west of the property and the Northern Pacific passes just two miles east.

THE LARGE ORE POTENTIAL AND THE GENERAL FACILITIES AVAILABLE TO THE AREA GIVE THIS PROPERTY ALL THE EARMARKS OF A HIGHLY PROFITABLE OPERATION.

IN ADDITION KAISER HAS VALUABLE PROPERTIES IN TWO OF THE HOTTEST EXPLORATION AREAS IN CANADA

1. La Ronge District where exciting new copper discoveries are taking place.

KAISER holds a large 27 claim group totalling 1126 acres in this area.

2. Sudbury Basin where the richest copper-nickel deposits in the world are located. KAISER holds a valuable 26 claim group located in Blewett Township and is planning an active exploration program on this Sudbury property.

An evaluation of this company's position, based on its large nickel deposit, favorably situated properties in two other hot mining areas plus an aggressive planned growth through exploration and acquisition of other properties gives this well-managed company an exciting outlook for large capital appreciation both over the short and long term. Investigation of this company shows it to have all the elements of a company that is on the horizon of a great future. We highly recommend the shares of . . .

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We act as principals in the underwriting of this speculative growth security.

Kemano Tunnel Rock Fall May Affect Alcan's Power

MONTREAL (Staff) — The big question today in the Kitimat project of Aluminum Co. of Canada is how to ensure full amount of power for ingot expansion beyond this year.

The reason: Measurement of water flow in Kemano tunnel indicates probability of an obstruction near its centre where the closing off of an access tunnel left an enlarged section.

The result: Repair work may be necessary before further new potlines can come in next year. Company engineers believe this work will not be of a major nature.

Engineering studies are being continued but it may be some time before the answer is found. A rock fall might have caused a partial blockage which is greater at the centre of the tunnel than elsewhere in it.

It will be necessary to dewater the tunnel to obtain the precise explanation. Presumably the water flow can be shut down fast enough for engineers to enter the tunnel, examine it and still get the water started again without interrupting production at Kitimat. They would have several hours, because it would take that time for Kitimat potlines to cool.

Despite the observed loss of head, power obtainable is more than required to supply smelters now at Kitimat. In addition, it would supply the 30,000-ton unit scheduled to come into operation at the end of this year.

However, the power problem opens up the question of supply for the planned expansion from 180,000 tons of ingot capacity annually at the end of 1956 at Kitimat to 330,000 tons of ingot by the end of 1959. Power supply at Kemano is scheduled to increase to 1.2 million hp by the end of 1959, equivalent to Alcan's giant Shipshaw power plant in the Saguenay district of Quebec.

Alcan's five smelters in Canada will have a rated capacity of 762,000 tons by the end of this year of 17.2% higher than the 650,000 tons capacity at the beginning of 1956.

The four smelters in Quebec and the smelter at Kitimat are currently reported operating at an optimum rate. Capacity of Isle Maligne, Que., amounts to 115,000 tons annually with the addition to the existing smelter of 22,000 tons which came into operation last week.

The fourth line at Kitimat, with a capacity of 30,000 tons, went into operation at the same time and thus increased Kitimat installed capacity to 150,500 tons per annum. A third line of 30,000 tons came into operation last April.

Construction is progressing as planned on the No. 5 line scheduled to enter operation in December, 1956, to bring year-end Kitimat capacity installed to 180,000 tons.

Labor Talks Cheer Western Oil Outlook

(Continued from page 1)

import quotas for the time being has further strengthened the export position of Canadian oil exporters.

As a result of the acceptance of a two-year contract by the Oil Chemical and Atomic Workers International Union of California there has been a speeding up in negotiations with the Anacortes, Wash., local of OCAW. A number of meetings have been held in recent days between Shell Oil officials and union representatives and hopes are high on both sides that an early settlement will be reached.

The three major points involved in the strike which has closed down the big Anacortes refinery and shut off the flow of Canadian oil via the Trans-Mountain oil pipeline for three months have been seniority, work schedules and wage rates.

Rates Offered

The rates offered originally by Shell at Anacortes last March are identical with those included in the contract recently signed by the same union with the California refiners.

With settlement of this strike and early resumption of 40,000 bbls. daily flow to the Anacortes refinery, total sales of Canadian oil would quickly crawl back up to the 400,000-bbls.-a-day level. Crude oil flow through the Trans-Mountain pipeline would increase to 123,000 bbls. a day.

West Coast offshore tanker shipments of Canadian oil in July will total some 500,000 bbls. — or an average movement of some 16,000 bbls. daily.

Standard Oil of California will take three shipments and Tidewater Associated Oil one shipment. This will add up to 13 tanker shipments in 1956 to end of July with outlook bright for continuance of this tanker market throughout the rest of the year at least.

Originally Canada was included in the import restrictions placed on U. S. oil importing companies. Last fall, however, after some determined representations by Canadian Government representatives, Arthur S. Flemming, head of the Defense Mobilization, exempted Canada and Venezuela from any restrictions. He stated, however, that this exemption was not permanent.

The recent announcement exempts all importing sources into U. S. West Coast.

Foreign Exchange Rates

Noon Value in Canada
Week Ended June 15, 1956

	U. S. $	U. K. £
Mon.	.98 22/32	2.76 12/16
Tue.	.98 16/32	2.76 2/16
Wed.	.98 16/32	2.76 6/16
Thu.	.98 17/32	2.76 7/16
Fri.	.98 17/32	2.76 5/16
Av.	.98 78/160	2.76 32/80

U. S. rate reported by Bank of Canada.

U. K. bid rate reported by Toronto-Dominion Bank.

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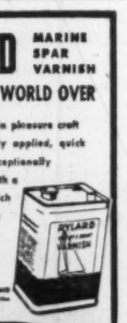

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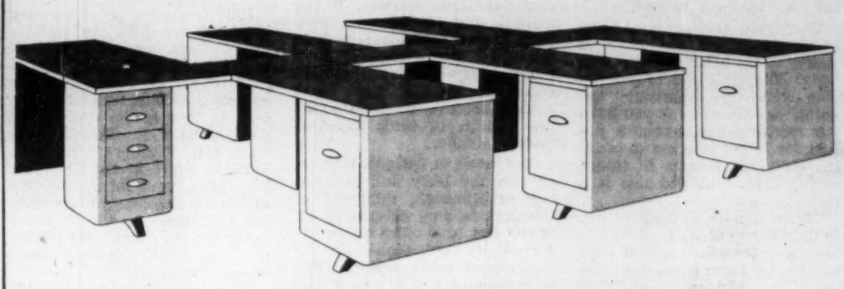

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- Choice of both body and top colors.
- Adjustable glides maintain perfect level work surface.

Canada's Servicemen Abroad

HAVE THEIR

OWN BANKING SERVICE

THROUGH

Canada's First Bank

This week, with the opening of Bank of Montreal offices at Canadian air-bases at Marville and Grostenquin in France, RCAF personnel and their families serving in Europe are enjoying for the first time their own specialized banking service.

The opening of these two offices follows the recent establishment of a B of M office in Paris and marks the beginning of a chain of offices to be set up at NATO bases in Continental Europe for the especial use of Canadian servicemen and women.

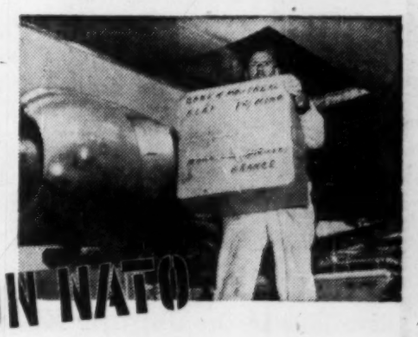
This expanded organization supplements the long-established facilities of the Bank's two London offices which have served Canada's armed forces of two World Wars.

Canada's First Bank...

FIRST WITH SERVICEMEN AT HOME AND ABROAD

The inauguration of this new service abroad is in line with the practice being followed at home, where the B of M provides specialized banking facilities to Canadian service personnel at Petawawa and Centralia in Ontario, Val Cartier in Quebec, Penhold and Wainwright in Alberta, Gagetown in New Brunswick and Shearwater in Nova Scotia.

The opening of special offices to serve the banking needs of Canada's armed forces abroad is in keeping with the pioneering traditions of the B of M over the past 139 years... and is another first for Canada's First Bank.



DESTINATION NATO

Cheques, deposit-slips, drafts and scores of other bank forms for the use of Canada's servicemen abroad... one of a number of shipments destined for the B of M's new branches at NATO bases in Europe.

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ESTHER WILLIAMS' SWIM POOL PACK is the first packaged Swimming Pool; a 15' x 30' permanent, in-the-ground pool which should cost less than $2,500 completely installed with top quality filter (no water changing).
This first volume-selling program is designed for big sales to average income families in booming SWIMMING Pool business.
Simplified installation through sub-contracting. No investment required for equipment or crews.

Exceptionally High Profits Possible for Franchise Dealer First Year ! !

To obtain this valuable franchise, immediate investment is required for opening self-liquidating inventory of Swim Pool Paks.

No Franchise Fee

Unique sales-closing tool available. A full-color motion picture of Esther and the swimming pool, ESTHER SELLS FOR YOU ! !
Featured Swimming Pool exhibits and national advertising—will direct hot leads, fast sales to franchised dealers in this area.
Pool selling season on right now, imperative dealer gets started now to get in on profits from this booming business this season.
If you qualify and have necessary available capital, telephone Mr. P. Sherwood, Franchise Director, at EM. 4-2317, immediately, OR write:

CANADIAN SWIMMING POOL COMPANY
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GLASGOW
Return fare tourist class from Toronto
$52.05 DOWN
Balance $21.11 per month for 24 months

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IL

LABOR ROUNDUP By JACK McARTHUR

Steel Labor Heads for Crisis

Basic Steel Negotiations Will Shape The Economy

Events are moving more rapidly toward a crisis in steel labor:

— United Steelworkers are working on plans for a strike vote at Stelco in Hamilton. No need for panic, since the conciliation board stage hasn't yet begun. A strike won't be called until after a conciliation report is submitted (assuming the dispute lasts to that point).

— Steelworkers' negotiators have been authorized to strike the U. S. steel industry unless a new contract is agreed upon by the end of June. The Union has been negotiating with the steel-making big three (U. S. Steel, Bethlehem, Republic), is now talking to the smaller makers.

—Steelworkers has launched a propaganda drive against the big three offer. The companies say the package is worth 65c hr. over five years, the Union say it's more like 28c (It includes a supplementary lay-off plan).

—In Canada there are rumors that an 18c package may be in the offing. This speculation seems premature, since contracts aren't usually signed in Canada until the U. S. pattern is set.

A five-year contract looks long from the union viewpoint. It would probably favor two years or three (the latter is the auto industry pattern where layoff pay plans are involved).

Steel is the year's crucial labor dispute. Any tie-up at all in either nation would result in shortages which would hamper industry and economy.

Meanwhile the Union is shooting for big gains, will undoubtedly strike if it doesn't get them.

* * *

Did UMW Guess Wrong At CIL?

A compromise deal this week ended a two-week wildcat strike by independent United Mine Workers at Canadian Industries Ltd.'s Nobel, Ont., explosives plant (FP, June 16).

UMW pulled the wildcat demanding a 15c wage hike, the company was offering 4c-6c. The compromise: 8c-9c, with an increase in one shift premium.

A good bet: Had it bided its time and gone through conciliation and further negotiations, UMW probably would have won a similar settlement without pulling out the men.

But UMW's motive was to solidify membership support by winning a fat, fast settlement in the face of a threatening raid from Oil, Chemical and Atomic Workers. The question now: Will the illegal strike tactic backfire, encouraging OCAWU (a member of the united labor congress) to move in?

* * *

Labor Briefs

Conciliation looks probable between Ford and United Auto Workers, as negotiations continue to lag.

* * *

United Auto Workers is toiling on two pet projects: The request for a union-management-government conference on the economic impact of "automation" and a study of ways of stabilizing employment in the farm implement industry.

UAW represents thousands of Canadian farm machinery workers, many of whom have been or will be laid off because of poor sales in the U. S. market. UAW would like to see our farm machinery exports spread around more, if possible, to minimize the effect of variations in the U. S. market.

* * *

Comforting sign of the firm anti-Communist line being taken by most Canadian labor: Three top Montreal laborites (all members of City Council) joined in a statement which advised: "Vote for whoever you please, but not for any Communist candidates" in reference to this week's provincial general election. Commies across Canada have been plugging for a common front, with little success.

New Du Pont Plant Starts Production

Du Pont of Canada has swung into production in its new automotive finishes plant at Ajax, Ont., 25 miles east of Toronto.

The step marks an end to previous import of automobile enamels from the U. S. parent for sale in Canada.

Employing 150 persons, the one-story brick plant also handles a variety of allied products such as undercoats, thinners and putties. Office and warehousing space and a technical sales service laboratory are included in the new facilities.

Chief production will be of Dulux 100, a recently developed finish claimed to eliminate car waxing for 18 months under normal use. Expected for use mainly by automobile manufacturers, the finish is resistant to grease and oil staining, heat and weathering and is especially suited to use in finishing two-tone car color combinations. It is an alkyd-resin synthetic enamel.

Duco, the company's line of fast-drying lacquer, will continue to be imported from the U. S. for the present.

Railway Freight Rates Up By 7% Starting This Month

MONTREAL (Staff) — Railway freight rates on most commodities and services will go up by 7% this month and there is a good possibility of further increases this fall.

In a ruling handed down this week, the Board of Transport Commissioners authorized the interim increase — termed an irreducible minimum — while the railways' request for a 15% rate hike is further studied.

Exceptions to the 7% interim boost are coal and coke, the rates on which may be increased by up to 12 cents per ton (the railways requested 25 cents per ton), and the following:

—Carload rates on grain and grain products subject to the provisions of section 328 (6) of the Railway Act, from all points on all lines of railway west of Fort William, Ont., to Fort William, Port Arthur and Armstrong, Ont. (Crow's Nest Pass rates).

—Export carload rates on grain and grain products from all Prairie points on all lines of railway to Vancouver, Prince Rupert and other British Columbia coast ports.

—Joint international rates (except rates on coal and coke) between Canada and the U. S.

—Rates between U. S. points on traffic passing through Canada;

—Export and import rates to and from Canadian ports which are maintained on a parity with rates to or from U. S. ports;

—Demurrage charges;

Stop-off charge specified in section 59 (4) of the Canada Grain Act of one cent for each cental, less three dollars;

—Rates and charges involved in other proceedings before the board upon which judgment is pending.

Further hearings into the railways' original request will reopen in Ottawa Sept. 24. The interval will afford opportunity for further study of the request by the board, railways and those who oppose the increase. In addition, the railways will have the opportunity to study the impact of the interim increase on the rate structure.

In granting the interim increase, the board noted that when increases on general freight rates appear inevitable, they can be absorbed less onerously by the public if they can be applied gradually.

The railways made their request for a rate increase following agreement on a new two-year contract with their nonoperating employees. Extension of the wage increase won by the nonoperating group to all employees will add an estimated $80 million to the combined CNR-CPR wage bill.

On the basis of estimated traffic level for 1956, the requested rate increase would have given a total of $46.8 million a year additional gross revenues to the two railroads.

Argus Net Rises 31%

Argus Corp's net income for the six months ended May 31, 1956 was 31% higher than net income for same period a year earlier ($1,108,565 vs. $845,934).

Indicated asset value per common share rose to $37.89 from $35.35 a year ago, report Chairman W. E. Phillips and President E. P. Taylor.

Income from investments amounted to $1,485,186 ($1,051,858 a year earlier). Expenses amounted to $376,621 ($205,924) including $288,871 ($131,250) interest. After $785,859 ($630,383) provision for preferred and common dividend a $322,706 ($215,551) balance was transferred to earned surplus. Earned surplus, after deducting new financing costs, increased to $3,827,024 ($3,684,193).

Indicated market value of securities was $77,848,994 ($52,785,221) and securities not having a quoted market value amounted to $1,674,198 ($1,836,298).

During the six month period Argus acquired 10,000 shares of Dominion Stores, 18,480 common shares of St. Lawrence Corp. and 40,000 shares of Dominion Tar & Chemical.

Argus' interest in Canadian Equity & Development amounted to 1,112,500 ($972,500).

Here are securities held by Argus at May 31, 1956:

Stock:	No. of Shares Held	Market Value $
B. C. Forest Products	400,000	6,450,000
Cdn. Breweries	400,000	12,200,000
Dominion Stores	385,000	13,860,000
Dom. Tar & Chemical	640,000	10,320,000
Massey-Harris-Ferg.	1,500,000	12,000,000
St. Lawrence Corp.	250,000	20,625,000
Other securities	.....	2,393,994
		77,848,994

MacM. & Bloedel Adds to New Mill

MacMillan & Bloedel Ltd. will spend an additional $1,250,000 on its new $42 million bleached kraft pulp mill at Harmac, B.C.

Additional amount is for a woodroom, which will allow wider use of wood products. It will provide a cordwood market for Nanaimo and surrounding area.

Company last fall began a $63 million expansion program at its Alberni pulp and paper division.

Program includes installation of two high-speed newsprint machines, a general purpose paperboard and coarse paper machine as well as an increase in unbleached kraft production to 500 tons daily. Newsprint machines will have a 600 ton daily capacity while the pulp and board one will be 180 tons daily.

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The following Issue having been sold privately, this advertisement appears as a matter of record only.

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Chateau-Gai Wines Limited
(Incorporated under the laws of Canada)
5% First Mortgage Sinking Fund Bonds, Series A

Dated June 1, 1956 Maturing June 1, 1976

Price: 100 and accrued interest

We, as principals, offered the 5% First Mortgage Sinking Fund Bonds, Series A, subject to the approval of all legal matters on our behalf by Messrs. Zimmerman, Haywood & Turville, Toronto, and on behalf of the Company by Messrs. Blake, Cassels & Graydon, Toronto.

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IN
GREATER MONTREAL
A SOUND ADVERTISING POLICY IN FRENCH CANADA

	Annual Retail Sales	% of Province
Greater Montreal Market	$1,724,583,000	59.1
Quebec Market *	$286,685,000	9.8
Three Rivers Market *	$137,970,000	4.7
Sherbrooke Market *	$135,459,000	4.6
* ALL 3 MARKETS TOGETHER	$560,114,000	19.2

The "QUALITY MARKET INDEX" is even more astounding:
Montreal is 9% ABOVE Canada's average
while the balance of Quebec Province is 23% BELOW

. . . and remember . . . you get nearly 100,000 more circulation at far less (50c per line against 60c) in La Presse than in any combination of newspapers in Quebec, Sherbrooke and Three Rivers districts.

LA PRESSE

One advertising dollar in Greater Montreal is worth any two outside.

ANNOUNCEMENT

GEORGE A. WHITE

G. A. Stauffer, president, Thompson Products, Limited, St. Catharines, Ontario, is pleased to announce the appointment of George A. White as Manager of Thompson Products Mining Products division.

Mr. White is a graduate of Queen's, holding a Bachelor of Science degree in mining with that University. He also did two years post graduate study at the Michigan College of Mining and Technology at Houghton, Michigan.

Before joining the TP firm, Mr. White was employed in various engineering and production capacities at the Hollinger Gold Mines with whom he had been associated since graduating in 1938. Mr. White served with the RCE overseas with the rank of Lieutenant and won the Military Cross at the battle of Orne at Caen.

He is a member of the Porcupine Institute of Administration, the Canadian Institute of Mining and Metallurgy, a director of the Northern Ontario Golf Association and has been captain of the Timmins Golf Club for four years.

New Coast-to-Coast Survey May Unlock More Minerals

Helicopters, canoes, horses and parachutes will be used for a quarter-mile-to-the-inch geological mapping of 25,000 square miles of the Cassiar Mountains and Stikine Plateau section of northern British Columbia for the geological survey of Canada this season.

This will be the first large-scale use of helicopters by the Survey for geological mapping in mountainous country. They proved their worth in two experiments during the last two seasons.

Other features of this season's survey, which will employ 73 field parties, include reconnaissance in the Arctic archipelago, studies of radioactive mineral areas of Northwest Territories, Saskatchewan and Ontario and an extended survey of the Maritimes.

Here are the main region-by-region targets of the survey parties:

Northwest Territories: Four-mile mapping in the Hardisty Lake uranium area, 100 miles south of Great Bear Lake. Coastal reconnaissance, study of Triassic fauna and stratigraphy in Eureka Sound, Ellesmere Island, and between Foxe Basin and Admiralty Inlet on northwest Baffin Island.

Yukon. Four-mile geological mapping in the Glenlyon metallic mineral area and the Kluane Lake mineral area.

B. C. Headquarters for the 25,000 square miles survey will be in the Dease Lake area, about 125 miles south of the Yukon boundary. Other areas to be mapped include Fernie, Charlie Lake, Anahim Lake, Kettle River, and in the base metal area near Lardeau, on Kootenay Lake.

Alberta. Studies of stratigraphy and structure in connection with oil and gas resources in the Livingstone area of the foothills and westward to the recently discovered Savanna Creek gas field. Investigation in the Canmore area to find the southern extension of minable coal seams. Lithological study from Red Deer River to the 49th Parallel, the reservoir rocks of the Pembina oil field. Four-mile mapping in the vicinity of MacLeod to probe gravel and groundwater resources.

Saskatchewan. Detailed mapping of the Beaverlodge and Milliken Lake uranium areas. Four-mile geological mapping in the Pelican Narrows mineral area and in the little-known Wollaston Lake area, northwest of Reindeer Lake.

Manitoba. Schist Lake base metal area, the Island Lake and Oxford House areas and an aeromagnetic survey, the first in Manitoba, from Churchill to Lac Brochet.

Ontario. One-mile mapping at Echo River, east of Sault Ste. Marie. Four-mile mapping and study of the clay belt in the Iroquois Falls area, 30 miles south of Cochrane, of significance to the pulp and paper industry. In the Nemegos area, 10 miles east of Chapleau, examination of niobium deposit.

Quebec. One-mile mapping of surficial geology in the Grondines area. Study of the fauna of the old Champlain Sea. Survey of groundwater resources in the St. Jean and Lachine areas.

New Quebec-Labrador. Four-mile mapping of the southern Labrador Trough, in the Mount Wright and Wabush Lake potential iron ore district.

New Brunswick. Detailed study of base-metal deposits in Bathurst area. Study of surficial geology in St. John River Valley for agricultural, forest and hydro-electric power development. Four parties will map the metalliferous belt from the Bay of Chaleur 125 miles southwest.

Nova Scotia. One-mile mapping of possible mineral areas in the Kennetcook area of the Minas Basin and the Whycocomagh area of Cape Breton Island. In the southwestern part of the province an outline of areas likely to contain concentrations of base metals is to be attempted.

Newfoundland. Four-mile mapping in the Conception Bay area of the Avalon Peninsula. One-mile mapping in the active metallic mineral area of Nippers Harbour in the Notre Dame Bay district. Mapping of a possible mineral area near Terra Nova.

Big Deficit Endangers Aussie Trade

Australian exports to Canada were worth $26.2 millions last year. Imports from Canada totaled $58.4 million. Trade gap: $32.2 million.

"We can't go on like this. Your export market in Australia won't last for ever," warned the premier of Victoria, Australia, the Hon. H. E. Bolte, on a recent four-day visit to Canada.

Bolte, a 48-year-old farmer, is touring Canada and the U. S. to seek industry and money for Australia, particularly for Victoria.

In a combined inducement and threat, he said that new industry could count on dual protection from raised tariffs and reduced dollar allocations to importers.

Have Canadians much to fear from the threat? Leading exports to Australia last year were automobiles and parts worth $14.8 million, Douglas fir, $11 million, newsprint, $8.6 million, aluminum $4.8 million, asbestos, $3.4 million, copper $2.7 million and tobacco, $1.7 million.

General Motors — Holdens production in Australia has grown from 10 cars a day in 1948 to a current 200,000 a year. Chrysler and Ford plants are growing fast. A $20 million aluminum plant is planned to start in Tasmania this year.

Said Bolte: "If Canadians do not come and manufacture in Australia someone else will. Some 60% of our foreign investment comes from the United Kingdom."

Bolte described his visit to Canada as "fairly satisfactory." He admitted that it was in the U. S. and not in Canada that he really expected to interest investors.

"Canada is a developing country, like Australia. There isn't the same chance to get capital here as in the U. S."

Canada "Lucky"

Is Canada getting too much foreign investment, though? "That is so much rubbish. You're lucky." Bolte described as "all haywire" the suggestion that Canadians were selling their heritage.

U. S. investment in Australia now totals about $400 million. It is growing at about $50 million a year.

Bolte listed these advantages for investors who seized the "golden opportunity" to be found "in any field you care to go into in Australia:"

- No capital gains tax.
- Lower company tax.
- No restrictions on taking home profits to Canada.
- A faster population growth for the next 30 years than any other country, and immigration at 120,000 a year.

But he admitted some disadvantages: higher income taxes at top level; higher interest rates on loans; over-employment, though overtime is lessening.

Income tax in Australia rises to 66% of portion of income over $35,000 a year. Interest rates on semi-government loans averages 5½%. Unfilled job vacancies exceed 50,000.

Start Of Regina Steel Pipe Plant Delayed

From Our Own Correspondent

REGINA — Construction of Regina's first steel pipe fabricating plant has been postponed until next year.

Hoesch Werke, A.G., Dortmund, West Germany, is delaying the project pending study of possible unfavorable tariff changes and to permit alteration of construction plants to save costs.

Contracts were let last fall to Bird Construction Co., Regina, for the building, and Armstrong and Associates, Vancouver, for the engineering work.

One of the reasons given for Hoesch's caution is that applications have recently been made to the tariff board by Canadian steel producers seeking higher protection from imported steel. Hoesch originally planned to use "skelp" from both Canadian producers and its home plants in West Germany. Some weeks ago it disclosed that it intended to import all its skelp from Germany.

Company directors plan to be in Canada next August, to interview the tariff board.

Manitoba's Auto Insurance Minimum $10,000 At July 1

From Our Own Correspondent

WINNIPEG — Starting July 1 Manitoba motorists will have to carry a minimum of $10,000 and $20,000 public liability insurance.

This doubles the former minimum of $5,000 and $10,000 under which insurance companies were liable to damages up to $5,000 in case of one person killed or injured in a single accident and up to $10,000 if more than one. The minimum $1,000 coverage for property damage is unchanged.

The new minimum makes effective amendments to the Insurance Act and the Highway Traffic Act passed last year. The amendments also raised to the same figure the liability of the province's Unsatisfied Judgment Fund.

When the 1955 amendments were introduced the registrar of motor vehicles said the increase would mean an average premium increase of $3.50. A few weeks later insurance companies announced that policies of $5,000 and $10,000 renewed after June 1, 1955, would be automatically rewritten for the higher limits of $10,000 and $20,000 with no increase in premium. This benefited about half the province's 200,000 registered motorists. The other half were already carrying public liability insurance of $10,000 and $20,000 or more.

Last December, insurance companies announced a further premium reduction effective January 1, 1956. On the average the cuts were about 6% for commercial vehicles and 9% for passenger cars.

The lower rates, according to motor vehicle registrar R. B. Baillie are part of the pay-off of the department's program of driver improvement, driver control, and licensing which when started was not expected to show results for four or five years. It is now in its fifth year and up to now has been operated only in the Greater Winnipeg area and a territory within a radius of 25 miles.

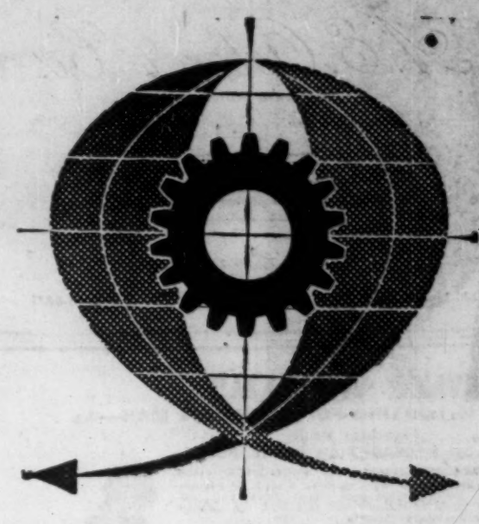
This year the Legislature voted an additional $30,000 for its extension. Within a few weeks it will be started in the Brandon area.

Since 1947 the claim frequency percentages have been 17.8 in 1948; 17.4 in 1949, 16.1 in 1950, 15.4 in 1951, 13.5 in 1952, 13.8 in 1953, and 15 in 1954.

Likewise the loss ratio—claims paid in relation to premiums earned by the insurance companies, have been gradually decreasing and now are below the all-Canada average. In 1950 the Manitoba loss ratio was 55.33% and 61.9 in 1951. In succeeding years it has gradually dropped, 58.29% in 1952, 52.52% 1953, and 48.1% in 1954.

MEMORY DIAMONDS LTD., Fort William, assets at fiscal year ending Mar. 31, 1956 amounted to $177,868. Of this, current assets accounted for $159,617 of which over $10,000 was cash. Current liabilities at the same date came to $9,283.

For the coming year, L. M. M. Baarts, president stated that a regular supply of high quality polished diamonds for the jewelry trade was assured and the outlook for supplies of industrial diamonds was favorable.



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of the Czechoslovak engineering industry will be exhibited and demonstrated at the

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Brno 8th to 30th September, 1956

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Commercial and Real Estate Financing, 1st & 2nd Mortgages, Construction Loans, Chattel Loan on Machinery, Equipment, Fixtures & Inventory. Sale & Leaseback. Present Financing Consolidated and increased — Payments Reduced. Receivable Discounting, Re-Discounting and Installment Financing. Long Term Subordinated Note and Debenture Financing, Bank Credit and Insurance Company Financing. New Ventures Financed. Promotional Financing.

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your lawn can be

the envy of the neighborhood with....

***new* NOMA 'SPRAY'**

complete underground sprinkler system

Spray your way to a luxury lawn! Gardeners know that nothing is so important in making a rich, strong, *deep-rooted* turf as regular watering. Only a permanent underground system can give you *controlled* watering and feeding—without "orphan-spots" that turn brown and thin out.

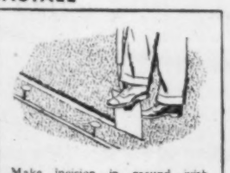
You'll solve your biggest lawn problems forever when you invest in your Noma Spray permanent underground lawn sprinkler system. It's the one modern system designed to do the job right for *your* lawn, no matter how large or small!

LOOK AT THESE FEATURES!

- Square Spray Pattern—reaches corners!
- Designed to Last a Lifetime!
- Rust Proof, Rot Proof, Freeze Proof (Even at 50° below)!
- Made of Black Flexible Vinyl with Bronze Fittings!
- Completely Assembled with Adjustable Spray Heads!

EASY TO INSTALL

Comes completely assembled. Nothing to put together. Add units as desired. Installs underground easily in minutes. *No damage to lawn.*



Make incision in ground with spade... 5 inches deep... insert Noma Spray, adjust volume of spray with key... That's all.

Approximate cost completely installed

1,000 sq. ft.	$40.45
2,000 sq. ft.	$97.20
3,500 sq. ft.	$162.00
5,000 sq. ft.	$218.70

Noma Spray costs even less if you install it yourself.

NOMA 'SPRAY' PERMANENT UNDERGROUND LAWN SPRINKLER SYSTEM

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Noma Lites Canada Ltd.
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☐ Please send me free literature.

☐ I am sending plot plan of my property, showing lawn area to be covered—please send layout and cost of a NOMA Spray system.

Address_____

☐ Have local representative call on me for free estimate.

City_____ Zone____ Prov._____

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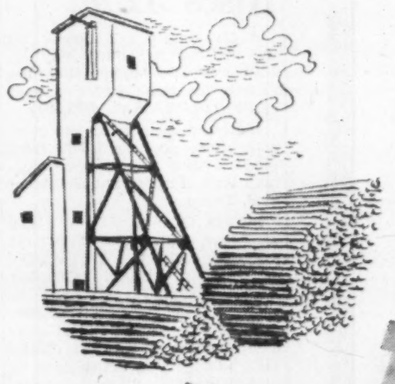
20 years ago...

... it's longer than you think since the great liner Queen Mary set out on her maiden voyage to New York ... since the year beloved King George V passed away.

In the same year ... 1936 ... the "Osmose" method of wood preservation was introduced into Canadian mines. To date, almost 200,000,000 bd. ft. of wood have been "Osmose" treated by Canadian mines for use above and below ground. The economy, simplicity of application, and the fire retardant properties imparted by the "Osmose" treatment have contributed to the general acceptance of the "Osmose" method by the majority of leading producing mines in Canada.



Use "OSMOSE" preservatives for GREEN wood
"PENTOX" preservatives for DRY wood

OSMOSE *Makes wood last 3 to 5 times longer*

WOOD PRESERVING COMPANY OF CANADA LIMITED

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ANNOUNCEMENT

EUGENE DE LUCA

Electric Reduction Company of Canada, Ltd., announces the appointment of Mr. Eugene De Luca as Manager of the West Coast operations of the Company. The West Coast operations include the new $5,000,000 sodium chlorate plant presently under construction in North Vancouver district.

Mr. De Luca has had twenty years' experience in all phases of pulp and paper manufacturing and latterly has been Assistant Manager of The Cellulose Division of Alaska Pine & Cellulose Ltd., Vancouver.

Predict Ottawa Nod For Giant B.C. Dam

(Continued from page 1)

dian Columbia is a matter solely within Canadian jurisdiction. There is no legal or treaty obligation to discuss it with the U. S. Nor is it within the jurisdiction of the International Joint Commission.

Different From Libby

In this respect it is different from the U. S. project for damming the Columbia at Libby, which does require I.J.C. approval because it would push water back into Canada and flood a stretch of 42 miles.

But the Mica Dam would not come within the terms of the 1909 Boundary Waters Treaty. The I.J.C. might be interested only because the whole of the Columbia Basin is under examination by terms of a reference made jointly by the U. S. and Canadian governments; though, even so, Canada would have no formal obligation to consult the commission before authorizing any plans the B. C. Government may approve for the Mica Dam.

U. S. power plants downstream on the Columbia can in fact only benefit from the upstream storage and regulation which Mica will provide. It is for Canada to secure, in the coming talks with the U. S. Government, that B. C. gets an adequate share of the extra power which Canadian storage will produce from U. S. plants.

In principle the U. S. authorities, speaking through Governor Jordan, chairman of the U. S. section of the I.J.C., now appear to recognize that Canada is entitled to proper compensation for providing upstream storage. This, said General McNaughton last week, is a considerable change of attitude within the last year.

No Agreement

But there is still no kind of agreement between the two countries as to what would constitute a due and proper return. This is one of the things which will have to be worked out — if it can be — in the coming intergovernmental talks.

These talks will be going on simultaneously with B. C. Power Corp.'s engineering surveys and working plans. Mr. Grauer said these might take two or three years before construction can start. The Canadian-U. S. talks are not expected to be quick, but it is thought that they must conclude within that period.

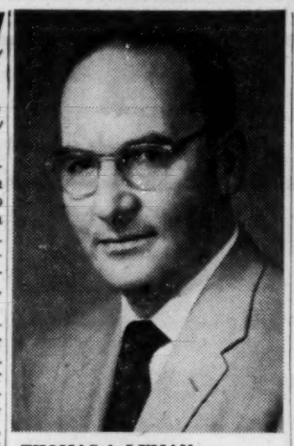
Planning, or even construction, of the Mica Dam is not considered to influence one way or other the question of the Fraser diversion. The Mica Dam is essential whether the Columbia waters continue to flow downstream into the U. S. or whether they are diverted into the Fraser.

Canada's negotiations with the U. S. will be conducted on that basis. The Federal Government doesn't yet pretend to know whether the Fraser diversion is economically sound, nor whether the salmon run can be preserved, along with the power plants.

But obviously the judgment as to whether it is economic will partly depend on what return the U. S. will agree to make to B. C. for a regulated flow of water down the Columbia.

The Federal Government's first step in preparation for the talks with the U. S. will be to consult with Premier Bennett of B. C. These talks, between Federal Minister Jean Lesage and Premier Bennett, were postponed from early June because of the Parliamentary crisis over the pipeline, and will be held in Victoria on July 4.

The controversial question of fish vs power on the Fraser River came up briefly last week when General McNaughton was giving evidence to the House of Commons committee on external affairs.



THOMAS A. LYMAN

has been elected vice-president, Beauty Counselors of Canada Ltd.; will continue as treasurer.

Charge Ottawa "Gypping" Workers In Profit Plans

(Continued from page 1)

Government presented its "Income Tax Resolutions." These stated: "There shall be excluded in calculating the income of an employee for the period of his first three years as a beneficiary under the plan any amount contingently allocated to him if . . . the employee does not become entitled to receive that amount upon withdrawal."

The explanatory notes in Bill 418 amending the Act state that the Government's proposal implements the earlier resolution. The profit sharing companies don't agree.

The Council pins much of its case on what it calls "a cardinal principle of taxation" as defined by W. S. Fisher of the Income Tax Appeal Board in the case of Damitri Pazuk vs. M.N.R., July 27, 1955. Mr. Fisher contended that "to be subjected to income tax the 'benefit' must have been received or enjoyed by the appelant in the year in respect of, in the course of, or by virtue of the office or the employment."

This principle is in direct conflict with present legislation as it is being enforced in the case of tax levies on profit sharing payments, the Council maintains.

ANNOUNCEMENT

EXECUTIVE V-P IS NAMED BY CHRYSLER

RON. W. TODGHAM

Appointment of Mr. Todgham to the position of executive vice-president of Chrysler of Canada is announced by E. C. Row, president and general manager. Mr. Todgham, a native of Toronto, has been associated with the company as a staff member, dealer and executive for 29 years. In this newly-created position, made necessary by the company's rapid expansion, Mr. Todgham will exercise overall supervision over all phases of Chrysler of Canada's operations, subject to the direction of the president.

Life, Annuity April Payment $28.6 Million

Canadian families collected more than $28.6 million in life insurance and annuity benefits in April from the more than 60 Canadian, U.K., U.S. and Netherlands life companies operating in this country.

April payments bring the first four-month benefit total to $116.6 million, the Canadian Life Insurance Officers Association reports. Benefits to date are $7 million higher than those in the same months last year. Death benefits alone rose from $40.7 million to $44 million.

Policyholders received a total of $25.2 million in the first four months of this year while payments of matured endowments, cash values, disability benefits and annuities amounted to $47.4 million.

Ind. Dev. Bank Outstanding

MONTREAL (Staff) — Outstanding loans, investments and guarantees of the Industrial Development Bank as at May 31, 1956 at $46,840,320 were nearly 14% higher than the $41,146,737 a year earlier.

Disbursements during May at $1,882,380 compare with $671,322 in April and $1,006,648 in May, 1955. May repayments at $1,825,514 compare with $881,896 a month earlier and $603,875 in the corresponding period last year.

For the first five months of 1956, disbursements led repayments $10,919,015 as against $8,239,811. Disbursements in the first five months of 1955 were $6,625,278 and repayments $7,827,013.

Replacement Values have skyrocketed since 1939. Adequate protection today cannot be borne by outdated coverage of a few years back.

Keep pace with the times — make sure your protection needs are proportionate with today's replacement value. Consult your Pearl agent today for complete information on Pearl's highly specialized, up-to-the-minute protection plan.

PEARL
ASSURANCE COMPANY LIMITED
of London England

THE EUREKA-SECURITY FIRE AND MARINE INSURANCE COMPANY
INCORPORATED 1864 - SAME YEAR AS PEARL — POLICIES GUARANTEED BY THE PEARL

Head Office for Canada: 25 ADELAIDE ST. W., TORONTO

ALL FORMS OF FIRE AND CASUALTY INSURANCE

We are pleased to announce that

W. C. ATKINSON, P. ENG.

has joined our Investment Research Dept.

J. H. Crang & Co.

40 Adelaide St. West, Toronto

Members of all Canadian Stock Exchanges and The Investment Dealers' Association of Canada.

TORONTO (UPTOWN), NIAGARA FALLS, HAMILTON, OSHAWA, STRATFORD, ST. CATHARINES, OAKVILLE, PETERBOROUGH, WELLAND,

Looking for An Investment Guide?

Sound investing calls for sound advice. Our Investor's Monthly Review discusses the important factors in the economy, the bond and stock markets and how they affect current investment policies. It also contains a selected list of Government, Municipal and Corporation Bonds, preferred and common stocks.

Copy supplied upon request

BANKERS BOND CORPORATION LIMITED
Business Established 1912
44 KING STREET WEST, TORONTO
KITCHENER LONDON HAMILTON

Fish Versus Hydro Plants In New B.C. Power Battle

OTTAWA (Staff)—When industrial British Columbia runs short of power, the salmon fishing industry will look like very small stuff indeed. This was the view of the fish vs. power controversy on the Fraser River given to a House of Commons committee by General A. G. L. McNaughton.

"Power," said General McNaughton, "is a first requirement of modern civilization . . . when the time comes that power is needed for the industry of the Vancouver area, everything else will be swept to one side."

At the beginning of this year, said the general, the Vancouver area was using about 600,000 kw of power. Its needs were increasing at the rate of 15% per year compounded. Even when the Columbia River power is tapped (as the B. C. Power Corporation is now proposing), within 30 years B. C. would be needing the additional power which could be got from the Fraser diversion.

This was a $2-billion proposition, the general stressed. The installed capacity on the Fraser, with the Columbia diversion, could be as great as 6.5 million kw. Even if it cost $300 million to preserve the fish run as well as getting the power, this wouldn't be a prohibitive cost in relation to the benefits which could be gained.

But General McNaughton insisted that the $300-million estimate for getting salmon up and down the Fraser had been prepared as a largely theoretical exercise. This was the estimate given by an expert fisheries report on the basis of a series of ten low-level dams down the length of the Thompson and the Fraser for power development after the Columbia had been diverted.

This had been a useful exercise, said the general, to collect information about topography and foundation conditions. But it had never been a remote possibility that power would be generated from a series of ten sites in a row. The next important step was to find ways of concentrating the available head of water at a limited number of sites. And this corresponded to what the fisheries people now wanted. They prefer for the salmon, said the general, a minimum number of delays in the journey up and down stream, rather than a long series of low-level dams.

No possibilities had yet been proved for getting the spawning salmon up a big lift and the young fingerlings down a big drop. But much more money would have to be spent on the problem, than the $50,000 now being used for research at the University of British Columbia. Useful as that was, said General McNaughton, it simply did not correspond to the magnitude of a $2-billion power project.

Sun Publishing Plans Second Stock Split

At a special meeting to be held in Vancouver on June 26 shareholders of Sun Publishing Co. will be asked to approve the second common stock split within nine months.

New proposal would subdivide present authorized 500,000 common shares, $2 par, into 500,000 class A shares, no par, and 500,000 class B shares, no par. The A stock would be nonvoting while B stock would be voting.

At last report there were 375,000 shares outstanding.

Proposed A stock would have a set cumulative dividend of 50c annually. After 40c had been paid on the B stock, both the A and B would participate equally in any additional dividends.

Plan provides that there shall be no dividend payment on B stock which would reduce net current assets to less than $500,000.

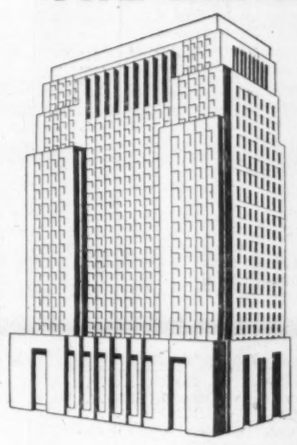
In September, 1955, Sun made a five-for-one split by subdividing the then authorized 100,000 common shares, $10 par, into present 500,000 shares, $2 par.

Consolidated net profit for the year ended Aug. 31, 1955, was $598,939, 37.5% higher than the $430,620 in previous year. Earnings per share amounted to $7.99 ($5.74 in previous year). Dividends amounted to 30c plus stock dividend of one $1 par redeemable preferred share for each common share held. These shares were issued from tax-paid surplus and were redeemable at par immediately thereafter.

Company publishes The Vancouver Sun with a circulation of about 200,000, and also does commercial printing, lithography and bookbinding.

THE BANK OF NOVA SCOTIA

"Your Partner in Helping Canada Grow"



RIGHTS TO PURCHASE NEW SHARES

The Bank of Nova Scotia is offering to shareholders of record May 31, 1956 the right to subscribe for one additional share of the capital stock of the Bank at $38 per share for each five shares held. Shares may be paid for in full or in ten monthly instalments commencing September 5, 1956, at which date the rights will expire.

We recommend that shareholders exercise their rights and that investors who do not now own shares of the Bank take advantage of this opportunity to acquire shares through the purchase of rights.

In a very real way the Bank of Nova Scotia is a partner in helping Canada grow. The increased activity of the Bank is reflected in its increased loans . . . made possible by the thousands of Canadians working with the Bank in helping Canada grow.

We offer our facilities to investors who wish to exercise their rights or to buy or sell rights or shares of the Bank. Information on request.

Burns Bros. & Denton Limited

44 King St. W., Toronto — 507 Place d'Armes, Montreal
Ottawa — Winnipeg — Hamilton

These Debentures having been sold, this advertisement appears as a matter of record only.

New Issue

$5,000,000
(Canadian funds)

The Montreal Catholic School Commission

4% Serial Debentures

maturing at the rate of $1,000,000 on May 15 in each year from 1957 to 1961 inclusive.

CRÉDIT INTERPROVINCIAL Limitée — RENÉ T. LECLERC, Incorporée

These Debentures have not been and are not being offered to the public. This announcement appears as a matter of record only.

New Issue

$10,000,000
(U. S. Currency)

The Montreal Catholic School Commission

4¼% Sinking Fund Debentures

Maturing May 15, 1976

Direct placement of the above Debentures has been negotiated by the undersigned.

CRÉDIT INTERPROVINCIAL Limitée — RENÉ T. LECLERC, Incorporée

SALOMON BROS. & HUTZLER — LEHMAN BROTHERS

New Issue

$500,000
(25,000 Shares)

ALFRED LAMBERT INC.

(Incorporated under the Quebec Companies Act)

5% Cumulative Convertible Redeemable Preferred Shares (1956)

of the par value of $20 each

The 5% Cumulative Convertible Redeemable Preferred Shares (1956) [hereinafter sometimes referred to as the "Preferred Shares (1956)"] when issued will be fully paid and non-assessable and preferred as to capital and dividends. Fixed cumulative preferential cash dividends of the rate of 5% per annum as and when declared by the Board of Directors will be payable quarterly in lawful money of Canada on the last days of March, June, September and December in each year by warrant or cheque at par at any branch in Canada of the Company's bankers. Dividends will accrue from June 30th, 1956.

The Preferred Shares (1956) will be redeemable, at the option of the Company, in whole at any time or in part from time to time on not less than 30 days' notice at redemption prices of $21.50 per share if redeemed on or prior to June 30th, 1961 and of $21 per share if redeemed after said date together in each case with an amount equal to all unpaid preferential dividends accrued thereon to the date fixed for redemption.

Conversion Privilege

Each Preferred Share (1956) will be convertible at the option of the holder thereof at any time up to the close of business on the business day immediately preceding June 30th, 1966 or up to the close of business on the business day immediately preceding the date fixed for redemption thereof, whichever is the earlier, into one fully paid Participating Class A Share of the par value of $1 of the capital stock of the Company.

The provisions to be attached to the Preferred Shares (1956) will provide for an appropriate adjustment in the conversion privilege in certain events including any subdivision or consolidation of Participating Class A Shares or payment of a stock dividend on the Participating Class A Shares.

In the opinion of counsel, the Preferred Shares (1956) offered by this Prospectus will be investments in which the Canadian and British Insurance Companies Act states that any company registered under Part III thereof may invest its funds without resorting to the provisions of Subsection 4 of Section 63 of the said Act.

We, as principals, offer these Preferred Shares (1956) if, as and when issued and accepted by us subject to the prior sale and change in price and subject to the approval of all legal matters on our behalf by Messrs. McMichael, Common, Howard, Cate Ogilvy & Bishop who are also counsel for the Company.

Price : $19.50 per share

Subscriptions will be received subject to rejection or allotment in whole or in part and the right is reserved to close the subscription books at any time without notice. It is expected that the share certificates will be ready for delivery on or about July 3rd, 1956.

A copy of the Prospectus will be promptly furnished on request.

René T. Leclerc Incorporée

W. C. Pitfield & Company Limited — Crédit Interprovincial, Limitée

Geoffrion, Robert & Gélinas Inc.

Seven-Point Plan To Lure Tourist Cash To Canada

With the tourist season on us, groups and individuals connected with the industry are taking a new look at the question, How can we get more tourists?

Here are some of the recommendations:

—Government advertising.

—Better tourist product.

—Develop year - round facilities.

—Better credit facilities.

The Canadian Tourist Association's submission to the Royal Commission on Canada's Economic Prospects is a comprehensive study into the present problems and future possibilities of tourism and the tourist industry as a whole in Canada.

For many years receipts from U. S. visitors in Canada were, as a source of U. S. dollar exchange, second only to our exports of newsprint. While income from tourism has continued to increase in the postwar period, it has done so at a slower rate than several other items in international trade.

And more tourist money is leaving the country. Canadians have suddenly emerged as international travelers of note and money spent by Canadians visiting other countries now exceeds Canada's expenditure on any single import.

Travel within Canada, by Canadians, has increased in recent years, but at a slower rate than travel to other countries.

Tourism in Canada can and should increase more rapidly. It is an important factor in the national economy. Not only does it affect many related industries, but tourism could be used to develop areas unsuitable for any other industry. Growth in population, increased urbanization, more leisure time and spending power — predicted for the next quarter century should increase travel receipts provided the tourist industry offers as good value for the consumers' money as do other recreational industries and provided adequate use is made of promotion and advertising.

Although certain factors (such as increased air travel) have combined to make travel to Europe and other distant points easier and cheaper, the majority of Canadians who make trips beyond this continent do so only once in several years or once in a lifetime. The problem, therefore, is to attract more of the North American tourist business, and to tap more of the trade that is going to the U. S.

Here are some of the Tourist Association's suggestions:

1. There should be an increase in government-supported advertising or that by broadly representative institutions or associations. Tourist advertising cannot be left entirely to private enterprise since it cannot, as a rule, advertise more than its own product.

2. The tourist product should be improved. Since the satisfied customer is as important as any paid advertising, it is important that the "product" he buys is of good value. The "product" consists of accommodation, meals, transportation, recreation, etc. Fish and game populations must not be depleted. Industrial development should be prevented from encroaching on recreational areas. Man-made attractions such as historic sights should be preserved, repaired and if necessary rebuilt. Roads and highways should be kept in good condition. Although there has been excellent development of national parks there appears to be a shortage of accommodations and places to eat in some of them.

Where services such as accommodation and meals are concerned education is important to ensure good product and courteous, imaginative service.

There should be more capitalization on local color including history, cultural activities and local crafts.

3. A greater effort should be made to develop year-round facilities and attract convention trade. The West Coast, Rockies and Laurentians have done well with their development of winter holidaying. Quebec City has produced a Winter Carnival, but more in the line of festivals and carnivals (not necessarily in the busy periods) could be done.

4. Improved standards, uniform grading and better credit facilities for additions and improvements would increase the number of tourists. Longer-term money lending by some impartial agency such as the Industrial Development Bank would help to insure up-to-date, efficient services of high quality.

5. Uniformity in certain fields are important to avoid inconvenience and danger. Road traffic signs and regulations, national uniform codes in public health requirements, motor vehicle laws (covering liability, ownership, registration, etc.), uniform liquor laws and uniform terms for tourist items such as "hotels" are some examples.

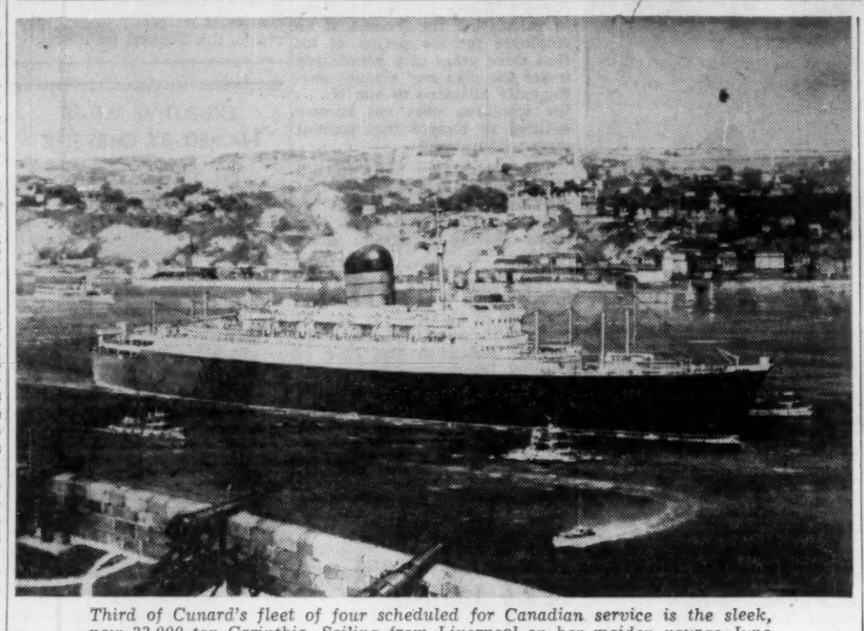
6. Regional and community organization is important. Where communities have aggressive, well-organized tourist organizations (Board of Trade, Chamber of Commerce or municipal bureau) they secure a greater volume of tourist business than communities that are not as well organized. Whatever the organizing body may be it demands the loyal support of all local inhabitants. Warmth and hospitality are vital to the growth of tourism.

7. The importance of tourism justifies the evolution of the present Canadian Government Travel Bureau into a division or department of government, having wider scope and higher status than it has at present.

Some parts of the country have done a lot to promote tourism. None has done enough. It is very important, not merely for economic reasons, that travel within Canada increase. It is one of the best ways to develop our national consciousness, to promote goodwill and improve relations between different peoples.

POST TRAVEL BUREAU

Where to go – how to go – where to stay



Third of Cunard's fleet of four scheduled for Canadian service is the sleek, new 22,000-ton Carinthia. Sailing from Liverpool on her maiden voyage June 27, she is scheduled to arrive in Montreal July 3.

Money Exchange

FOREIGN BANKNOTES QUOTED IN N. Y. AS OF JUNE 8

	—$ (U.S.)— Bid	Asked
Europe		
Austria, 100 Sch.	3.83	3.90
Belgium, 100 Fr.	1.95	1.99
Denmark, 100 Kr.	14.10	14.50
England, 1£	2.71	2.75
Resident, 1£	2.72	2.75
Transferable, 1£	2.76	2.78
Finland, 1000 Ms.	3.03	3.30
France, 1000 Fr.	2.53	2.57
Germany, 100 D.M. ..	23.65	23.80
German (E.), 100 E.M.	6.00	6.50
Hungary, 100 For.	2.30	3.20
Italy, 1000 L.	1.58	1.595
Netherlands, 100 Gs.	26.00	26.30
Norway, 100 Kr.	13.40	13.90
Portugal, 100 Es.	3.38	3.48
Spain, 100 Ps.	2.27	2.32
Sweden, 100 Kr.	18.40	19.00
Switzerland, 100 Fr. ..	23.25	23.35
Yugoslavia, 1000 Ds. ..	1.50	2.00
Africa — Asia		
Australia, 1£	2.07	2.15
Burma, 100 Ks.	5.50	8.50
Ceylon, 100 Rs.	16.25	18.25
Egypt, 1£	2.42	2.55
India, 100 Rs.	20.20	20.60
Japan, 1000 Yen	2.50	2.65
New Zealand, 1£	2.40	2.55
Pakistan, 100 Rs.	14.00	16.00
Philippines, 100 Ps. ..	32.50	34.50
Western Hemisphere		
Argentina, 100 Ps.	2.80	3.15
Bolivia, 1000 Bs.	—.13	—.19
Brazil, 100 Cs.	1.15	1.21
B. W. I., 100 BWI$	55.00	58.00
Canada, 100 Can. $ ..	99.00	100.50
Chile, 100 Ps.	—.18	—.23
Colombia, 100 Ps.	19.50	22.50
Cuba, 100 Ps.	96.00	99.00
Curacao, 100 Gs.	47.50	52.50
Ecuador, 100 Srs.	4.90	5.20
Dom. Rep., 100 Ps.	96.00	99.00
El Salvador, 100 Col. ..	35.00	39.00
Honduras, 100 Lem. ..	45.00	49.00
Jamaica, 1£	2.40	2.65
Peru, 100 Soles	4.80	5.30
Uruguay, 100 Ps.	23.50	25.00
Venezuela, 100 Bol. ..	29.25	29.75

All-Canada Trip Planned By CTAL

Canadian Travel Advisors Ltd., (CTAL), the non-profit travel association which began operations early this year, recently inaugurated the third of its package tours.

Featuring travel in Eastern Canada, the 15-day air tour of Montreal, Ottawa, Toronto and Muskoka resort area leaves Toronto every Saturday to August 25th.

The first stop is Montreal for 2½ days. With the Laurentian Hotel as headquarters, tours are organized throughout the city and to the Laurentian Mts., with a luncheon stop at the luxurious resort—Chantecler.

From Montreal the party moves to Ottawa (Lord Elgin Hotel) where excellent arrangements have been made for sightseeing in the National Capital.

A day in Toronto (Royal York Hotel) includes a tour of the city and a cruise by S.S. Cayuga across Lake Ontario.

The remainder of the holiday is spent in Ontario's northern resortland. There is a choice of a seven-day stay at the Delawana Inn at Honey Harbour, Georgian Bay, Muskoka Beach Inn, near Gravenhurst or Wigwassan Lodge on Lake Rosseau.

The eastern Canada circuit costs from $206 to $230 for double room accommodation throughout, plus meals in Montreal, Ottawa, Toronto and aboard S.S. Cayuga, tips and personal expenditures.

The Lady's Figures

Built by: John Brown & Co., Clydebank, Scotland.
Master: Andrew MacKellar, R.D. (native of Como, Que.).
Tonnage: 22,000.
Length (overall): 608 ft., 3 ins.
Breadth: 80 ft.
Depth: 46 ft., 3 ins.
No. Decks: Nine.
Passenger capacity: 868 (154 first class, 714 tourist).
Cargo space: 305,000 cu. ft. (290,000 general cargo, 15,000 for perishable goods).
Cost: $15 millions (approx.).

Pincher Creek Sulphur Plant Work Started

Work is now under way on the new sulphur plant of British American Oil Co., 13 miles southeast of the town of Pincher Creek in southern Alberta.

After a delayed start due to unfavorable weather conditions, the 135 men now on the job have completed 65% of the grading work and an estimated 6% of the over-all plant construction.

The plant is scheduled to commence operations around Oct. 1, 1956 and assuming initial operations at full capacity, which is reasonably assured, will produce approximately 225 long tons of sulphur and 2,200 bbls. of condensate daily.

The initial plant will be increased to meet the demands of Trans-Canada Pipe Lines, when that line has been completed and during the first year of increased operations it is estimated the enlarged plant will produce daily, some 450 long tons of sulphur, 720 bbls. of propane, 770 bbls. of butane, 550 bbls. of natural gasoline and 4,590 bbls. of condensate. In the following years, the plant's approximate daily production will be 780 long tons of sulphur, 1,230 bbls. of propane, 1,300 bbls. of butane, 1,020 bbls. of natural gasoline and 7,810 bbls. of condensate.

During the first year of operations, prior to the completion of the transCanada pipeline, the residue gas will be injected back into the Pincher Creek field. When the plant is enlarged to meet Trans-Canada's demands, the residue gas will be sold to Trans-Canada at a rate of 1,000 mcf. per day during the first year and 170 mcf. per day in subsequent years.

Manitoba Power Expands Services

Manitoba Power Commission has recently made considerable progress in its expansion and improvement program despite the late spring breakup and the shortage of some vital materials.

Projects under way include:

—Installation of mercury vapor street lighting in some business sections of Transcona.

—Conversion of Roblin distribution system to higher voltage.

—Large distribution improvement project at Winnipegosis.

—Work on distribution systems at Falcon Lake and West Hawk.

Construction recently completed included:

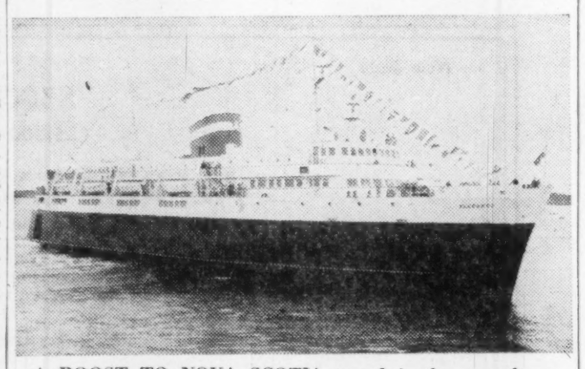
—Poling and anchoring of a new 33,000 volt transmission line from Telford to serve a new summer resort at Falcon Lake.

—Completion of a new 750 kva capacity substation at Woodlands.

—Increase in Gull Lake substation capacity to 500 kva from 150 kva by installation of larger transformers.

—Conversion of both Russell and Binscarth distribution systems to higher voltage.

—Completion of a large street lighting project in new housing development of Brandon's west end.



A BOOST TO NOVA SCOTIA travel is the new ferry service operating between Bar Harbor, Me., and Yarmouth, N.S. Operation of the sleek $5 million car and passenger ferry, M. V. Bluenose (above), may mean an increase of 60,000 visitors to Nova Scotia, it is estimated. "The door to international trade has been opened by the Bluenose and tourist possibilities are unlimited," said John Cahill, president of the Yarmouth Board of Trade. Passenger capacity of the new CNR-operated ferry is 500, while it can accommodate 150 vehicles. It cuts driving distance from Boston to Yarmouth by 690 miles; to Halifax 267 miles; to Kentville 387 miles. And it shortens the drive from Canadian centres such as Montreal, Ottawa and Toronto nearly 300 miles by way of New England.

New Red Planes, Missiles Could 'End Run' DEW Line

WASHINGTON, D.C.—A short-lived career for the Distant Early Warning (DEW) radar line strung across the northern rim of Canada, has been forecast here by top-ranking U. S. Air Force brass.

In testimony just released by the Senate Subcommittee on the Air Force, officials stated that the DEW line will be of little or no use against the intercontinental ballistics missile which the Russians are known to be developing. General Curtis LeMay, C.-in-C. Strategic Air Command, testified: "When the missile comes into general use, the DEW line won't be any protection."

General LeMay indicated the missile would come into use in "a few years." He also said the Russians are building a plane which may be able to make an "end run" around the DEW line and strike at Canada and the U. S. from the side instead of flying over the Arctic.

"It is possible," he told the Senators, "for the turbo-prop airplane, the Bear, that the Russians have . . . to take off from Russian territory and go clear around the warning line and come in from the southeast and hit the coast with very little warning, with just what the coastwise radars can see."

General Earl E. Partridge, C-in-C Air Defense Command and Continental Air Defense Command, added an extra warning: "We find ourselves in 1957, 1958 and early 1959 in not too good shape with regard to our high altitude and our low altitude air defense . . . We have a system in being today, however, the framework is there and we see our way reasonably clear to the solution of the problem of building an effective air defense against any type of manned bomber which we now see on the horizon.

"Where we forecast difficulty, however, is with the intercontinental ballistic missile."

B-A Discovery In East Texas

British American Oil Producing Co., — U. S. subsidiary of British American Oil Co., — has made what appears to be significant and possibly a major Woodbine discovery in the deepest part of the East Texas basin between the Van and Hawkins oil fields.

This well, B-A no. 1 Weisenhunt, a wildcat located in Wood County, Texas, a 6,300-acre block owned by B-A, is now drilling at 10,200 ft. The first official information released reports 85 feet of saturated Woodbine sand. Present plans are to drill a sufficient depth to test the Paluxy formation expected at around 12,000 ft. before the well is completed.

Carinthia in Canadian Service by Month's End

A brand-new ship will join the Cunard Steamship Co.'s fleet of Canadian service liners.

Launched last December by Princess Margaret, at the shipyards of John Brown & Co., Clydebank, Scotland, the Carinthia sails from Liverpool June 27 on her maiden voyage. She will stop at Quebec, and is scheduled to arrive in Montreal July 3.

The third of a quartet to be built under a 90,000-ton building program for the Canadian passenger and cargo trade, the Carinthia is externally similar to the first two members of the class — the Saxonia (commissioned 1954) and the Ivernia (1955). The Sylvania is expected to enter service in 1957.

But the interior of the new ship is quite different from her predecessors. One innovation for Cunard liners is the soda fountain in the tourist section. Although unusual in British-built ships, it has the most up-to-date equipment for making sundaes, sodas and milk shakes. Two British soda bar attendants have spent three weeks in the U. S. studying the art of soda-making.

Interior decor in the Carinthia is in keeping with Cunard tradition—reproducing period styles. But materials are all modern. For instance the tourist restaurant will resemble room design of the ancient days of Pompeii.

The effect is contrived using the latest developments in plastics which permit quick and easy housekeeping. The First Class Restaurant is French rococo style of the 18th century and the first class smoker is Tudor in design. They all look authentic, but the materials are ultra modern.

First class staterooms are situated on the main deck. Designed to accommodate 154 passengers, they comprise six fully air conditioned suites, six single, 18 double and eight triple berth cabins each with adjoining bath or shower. Wall coverings are of figured eucalyptus and sycamore or Canadian maple and grey aspen. All first class public rooms except the restaurant are on the promenade deck.

Tourist accommodation for 714 passengers is attractive and colorful. Furnishings in the spacious staterooms includes generous wardrobes, reading lights, bedside curtains and washbasins with hot and cold water. Numerous bathrooms are placed throughout the tourist area and each stateroom has one close by.

The galleys, designed to serve up to 4,000 meals each day, have up-to-date equipment for serving attractive meals promptly. There are 15,000 cu. ft. of insulated space aboard that is set aside for carrying perishable goods.

Fitted with stabilizers to reduce the roll in rough weather, the Carinthia has the latest navigation equipment and marine engineering facilities. Telephonic communication to any part of the ship may be carried out at all times.

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M-1

Bruce Hutchison writes about:

The Uncommon Man

By BRUCE HUTCHISON

Observant strangers — J. B. Priestley is the latest of them —are always going home to deplore Canada's dullness and lack of color. If a hasty visitor knows little about us, and can think of nothing else to say, this invariable pronouncement sounds wise and penetrating, though a little stale. It gives the man who makes it a reputation for subtle intuition when, in all probability, he is suffering only from an indigestible Canadian Club luncheon.

As I mentioned here before, after a clash and reconciliation with Mr. Priestley, I welcome all such candid comment, I think the nation is childish to resent it, but I can never imagine where the stranger has been in Canada to find us dull, colorless and excessively sane. Certainly he has not been in these parts.

Where I write this dispatch, in the great woods of the Pacific coast, life is about as colorless as a tornado, as dull as an asylum for the violently insane. Fortunately the writers of tourist advertising have never found us out. That excellent public servant, Mr. Leo Dolan of the Canadian Travel Bureau, writes lyrically about the quaint habitants of Quebec (the most staid and sensible folk in Canada) but the real quaintness of the country escapes him.

Surrounded By Superior Local Brand Of Lunacy

It is not for me to reveal our secrets or boast of our superior local brand of lunacy. I note only that I am surrounded here by a retired rich man who labors 18 hours a day to support eight worthless beef cattle, bought as a thrifty investment but now too precious as pets, and too tough to be killed; an erudite communist, with a large capital in government bonds, who is always denouncing the interference of the state in his private affairs; a lady theosophist who communes with her ancestors, presently reincarnated in the bodies of birds, deer and frogs; a distinguished doctor who carves the human body in town all winter only that he may spend the summer carving wood into useless objects which he presses on his friends; a bearded old-age pensioner who writes unpublished tracts to prove that the world is flat and plays a fiddle for inspiration while seated in the crotch of a high tree. And a few miles away, in Victoria, Premier W. A. C. Bennett has just attacked high interest rates as certain to produce inflation.

By working hard at it, I am getting a little crazier and happier every day.

Such is the dull, colorless, commonplace and lamentably unimaginative Canadian breed of the luncheon speakers' legend. These observers observe our urban, party manners, never the splendid madness and wild whimsy benind them, once we have escaped into our original Canadian habitat, the wilderness. But I am not concerned here with the harmless delusions of foreign travelers. I am attempting, in this neck of the Canadian woods, to study a deep social movement, a counter-revolution and the true hope of our era.

We call it the era of the Common Man when, in fact, he has become so uncommon and scarce that his future looked, until recently, as hopeless as the whooping crane's. Now, I am all in favor of preserving the whooping crane but I think man also is worth preserving, at least as a curiosity, and civilization seems determined, above all, to destroy him in his own interests.

Why Common Men Flees To Woods Every Summer

Progress has reached a point where most of us Common Men are so uncommon, specialized, compartmentalized and narrow that we can do only one useful thing, have only one skill and, for the rest, live by pushing buttons. As "automation" spreads, our universities will have to offer courses and grant degrees in button pushing and doctorates of television viewing.

People therefore ask me why Common Men of my kind flee to the woods every summer and live an underprivileged life somewhat more primitive than that of a Chinese peasant or an Eskimo.

It is usually supposed that we seek peace and rest when, of course, we are exhausted by grinding labor from dawn to dark; or health when we are always wrecks by autumn; or the beauty of nature when we never give it a passing glance, our eyes being fastened on a cross-cut saw or a splitting wedge.

No, we come here in search of knowledge and humility, nothing else. We come not primarily in rebellion against the twentieth century but in the hope of creating a better one in the twenty-first. We come, in short, to learn how to do things when man collectively knows how to do everything and man individually knows how to do practically nothing outside his daily job.

I say we learn humility because, though we never master any craft completely, we begin to appreciate, now that they are left behind, the glories of civilization.

No man fully appreciates the achievements of his species while he enjoys their benefits. But let any civilized man attempt to build his own house, let him build even a clumsy boat, learn to sharpen a saw (an art of utmost difficulty) or rear up a lopsided chimney of stone and mortar, and then he will suddenly grasp those agelong, painful steps that brought mankind from a fire in a cave to a hydrogen explosion in the South Pacific.

Then he will value the accumulated skill of the carpenter, the mechanic, the stone mason and the scientist who have produced the Century of the Common Man but somehow don't know what to do with it. And in a dim way he will know at last what to do with it.

Wonderful New Hope Offered To Civilization

The problem of what to do with it now occupies the time and genius of parliaments, governments, royal commissions and especially of foreigners visiting Canada. All these experts seem to have lost sight of the first and desperate necessity of our age. It is to return the Century of the Common Man to man himself, to give him the chance to live, breathe and function as a man, not as a social phenomenon, a numeral in the census or a percentage point in the Gallup Poll.

A talented person like Mr. Priestley sees our present dangers all too clearly. The spectacle of collective man learning how to do everything but live appalls him and he ends by denouncing our drab civilization. I share his horror but quarrel with his prophesy of universal, subhuman dullness. For it seems to me that civilization, with its accumulation of wealth, and "automation," with its accumulation of leisure, offers us a wonderful new hope.

For the first time in human history it offers the chance to live fully, if we have the sense to seize the chance. To be sure, not many people have seized it yet but we are learning. My erudite communist was over here a few minutes ago denouncing the power of the Government, the owner of the eight worthless cattle has bought a ninth at a bargain price, the theosophist lady has just discovered the soul of Charlemagne in a toad and the fiddler is playing his fiddle in a tree high above his flat world.

Why don't Mr. Priestley and the other prophets of Canadian dullness come out this way sometimes and see the dawning century of the Uncommon Man, freed by modern economics to be himself, God pity him.

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IDA MEETING

Here Are Fields For Investment

How Atoms and Electronics Will Aid Future Business

The shape of things to come in two segments of the public utility field were outlined at the annual meeting of the Investment Dealers' Association of Canada at St. Andrew's-by-the-Sea, N.B.

Thomas W. Eadie, president of Bell Telephone Co. of Canada, reported on the rapid growth trends in the telephone industry ($1.5 billion investment now, $3 billion more to be invested in next 25 years).

William J. Bennett, president of Atomic Energy of Canada Ltd., told of the prospects of nuclear power and some of its implications for Canadian mining and manufacturing industries.

Here are digests of their speeches:

By WILLIAM J. BENNETT
President,
Atomic Energy of Canada Ltd.

The great advantage of nuclear power as compared with conventional thermal power is the low fuel cost. Fuel costs in 100,000 kw conventional thermal stations on this continent now average from 3 to 4 mills per kwh. Using present technology, it should be possible to achieve a fuel cost of not more than 2.5 mills per kwh in a 100,000-kw nuclear station operating at a load factor of 70%. With improvements in technology —and it is reasonable to expect such improvements — this cost might be reduced to as low as one mill per kilowatt hour.

On the other hand, the capital cost of nuclear stations will be higher than the capital cost of conventional thermal stations.

The capital cost of conventional thermal stations of 100,000 kw capacity ranges from $120 to $160 per kw. The capital cost of the first generation of nuclear power stations — that is, the stations which will come into operation over the next two or three years —will range from $500 to $600 per kw. This cost must be reduced to something like $250 per kw, if the advantage of lower fuel costs in a nuclear station is not to be lost by reason of high-capital charges.

On the basis of a 6% annual growth rate, Canada will have a total installed capacity in 1965 of 28 million kw and a total installed capacity in 1980 of 67 million kw, as compared to the present installed capacity of 16 million kw.

Source of Power

A conservative estimate shows that of the total installed capacity of 28 million kw in 1965, 24½ million kw will be supplied from hydro stations and the balance, or 3½ million kw, will be supplied by thermal stations.

Of the total installed capacity of 67 million kw in 1980, 46 million kw will be supplied from hydro stations and the balance, or 21 million kw, will be supplied by thermal stations. The substantial increase in 1980 in percentage of thermal power as related to the total installed capacity reflects the exhaustion of economic hydro sources.

In those regions where cheap fossil fuels are available, thermal stations will be of the conventional type — that is, they will burn coal, oil or natural gas. In those regions which do not have indigenous supplies of fossil fuels, transportation costs at some point may impose a heavy penalty, since fuel costs are the major factor in the total costs of power generated in thermal stations.

Such regions — and Southern Ontario is one of them—will face an inevitable increase in power costs, whether the choice lies between high-cost thermal power due to transportation expense or high-cost hydro power due to transmission expense, unless some alternative source of cheap energy can be found. Nuclear power is such a source.

On the basis of present information about power reactor technology, it is a reasonable expectation that nuclear power can be generated by 1965 at a cost of not more than 6 mills. This 6-mill cost is roughly equivalent to the cost of producing power in a conventional thermal station using coal at $8 per ton.

If we accept this cost target, the following estimate can be made as to the respective roles of conventional thermal stations and nuclear stations in meeting the requirements for thermal power in 1965: of the total installed thermal capacity of 3½ million kw, somewhere between 200,000 kw and 400,000 kw will be nuclear.

Beyond 1965 we would expect some reduction in nuclear power costs as the result of improvements in technology. However, for the purpose of this forecast I have assumed a cost of 6 mills, although I think this is a conservative estimate. On this basis, of the 21 million kw of thermal capacity in 1980, something like 7 million kw will be nuclear.

To the extent that nuclear power costs can be reduced below 6 mills, the contribution of nuclear power to the total installed capacity in 1980 will be greater. In its submission to the Gordon Commission, Ontario Hydro has forecast a nuclear installation of 400,000 kw in 1965 and between 6 million and 7½ million kw in 1980.

My forecast indicates that the part played by nuclear energy in supplying Canada's power requirements will be a modest one up until 1970. After that period we would expect that the role of nuclear power would become increasingly important and that by 1980 nuclear power plants would account for over 10% of the country's total generating capacity. Beyond that period the percentage will increase sharply.

Power Reactors

The NPD (Nuclear Power Demonstration) reactor which we are now building in association with Ontario Hydro, is based on the technology which we have pioneered at Chalk River. It will have an electric output of 20,000 kw. We also have under way a preliminary design study with supporting development programs for a large power reactor—in the range of 100,000-200,000 kw.

In addition, we are considering design studies for other types of reactors which we believe may have a useful place in the Canadian economy — for example, a dual-purpose reactor which will provide power and process heat for the pulp and paper industry, and a small reactor which will supply power and space heating in remote areas of Northern Canada where the cost of conventional thermal fuels is excessive.

From the inception of the Canadian nuclear power development program we have recognized two basic principles: that nuclear power plants will be operated by those who are now in the business of producing power — the utilities — and that these plants and their components will be designed and built by manufacturers. These principles have determined the manner in which we are carrying out the program.

The participation of the utilities takes two forms. First, we have an Advisory Committee on Atomic Power on which the utilities are represented, and, second, we have established at Chalk River a Nuclear Power Branch, the personnel of which has been recruited from the utilities. Under this arrangement we are providing for the maximum inter-play of ideas as between those who must operate power plants and those who are responsible for their design.

Manufacturer's Part

The participation of the manufacturer can involve two stages:

(1) He must obtain the kind of information about power reactor development which will enable him to determine what part, if any, his company can play in that development.

(2) He can undertake the design and fabrication of power reactors and their components, with supporting engineering development programs.

At the information stage we are supplying technical literature on power reactor development and we are also arranging frequent conferences at Chalk River, both for individual companies and associations. For example, recently a two-day conference was arranged for the Pulp and Paper Research Institute.

Participation in engineering development, design and fabrication is obviously the most important side of our partnership with industry. This participation began in a major way on the NRU reactor project. More than 100 Canadian companies have been engaged on the fabrication of parts for this reactor, involving special designs outside of normal manufacturing experience.

The contract for the detailed design and construction of the NPD reactor has been placed with a Canadian manufacturer. Contracts have also been placed for the design of a research reactor of the swimming-pool type and for the design and manufacture of a loop system for the NRU reactor. Proposals have been invited for the supply of fuel elements for the NRU reactor and for the components of the reactor of the NRX type which we are building in India under the Colombo Plan.

These are only a few of the highlights of a large and expanding program of industrial participation, but I believe they serve to clarify the respective areas of responsibility.

Atomic Energy of Canada Ltd. must accept the responsibility for supplying the data necessary for the design of nuclear plants, whether they be used to generate electric energy, for space heating, the production of process heat, or for all three, since the nature of the research and development program and its expense are un-

(Continued on page 15)

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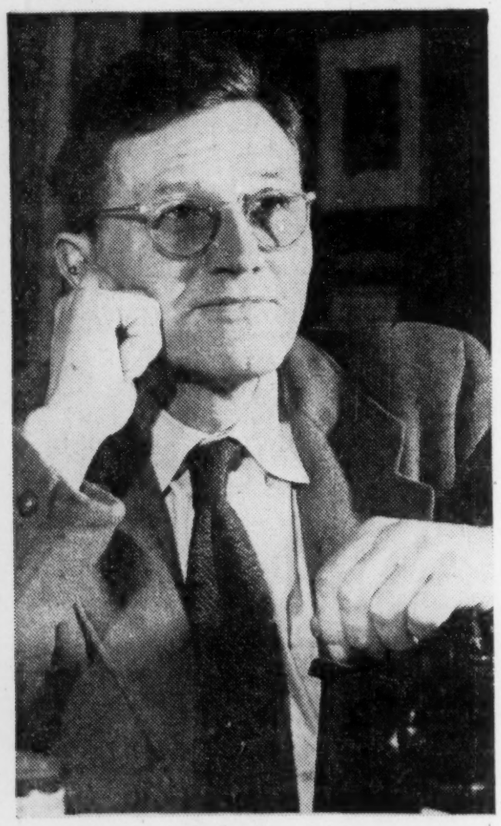

Bruce Hutchison

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initiative

When Bruce Hutchison, noted Canadian journalist and author of three best sellers* agreed to Maclean's request to write the 130,000-word "Rediscovery of the Unknown Country" series, he undertook one of the toughest assignments Maclean's editors have ever asked a writer to tackle.

To get the raw material for this 15-article series Hutchison drove more than 20,000 miles. He stopped, looked, listened and trudged in all of Canada's ten provinces from Newfoundland to British Columbia. He interviewed hundreds of people. He was on the go for the better part of a year.

When he arrived home "swimming in an ocean of remembered anecdotes and a packing case of notes" even the prolific Hutchison was temporarily staggered. "There is so much to write about," he reported to Maclean's editors, "that the thing appals me."

**The Unknown Country, The Incredible Canadian, The Struggle for the Border*

But the series he wrote, some of the title pages of which are shown below, seems already destined to become another Canadian classic. With the June 23 issue this fascinating seven-month series comes to an end but, for every Canadian who has followed it, it will mark the beginning of a new appreciation of the exciting land they live in.

The same enterprise and imagination which gave its readers the memorable Hutchison epic has in the past few years made Maclean's the most intensely read, most widely talked about of Canada's magazines . . . a vivid, vigorous publication which exerts a deep and telling influence on the thought and action of men and women in every important sphere of Canadian society.

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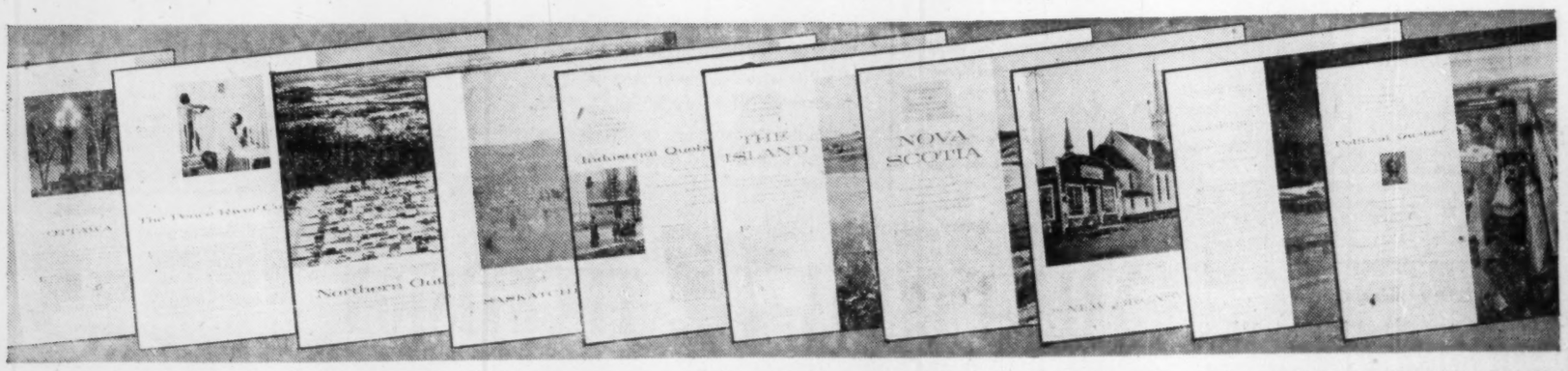

"Bruce Hutchison Rediscovers the Unknown Country" was presented to Maclean's readers in a series of 15 consecutive articles over a period of seven months. The illustrations were selected from more than 2,500 color photographs, taken for Maclean's by Canadian camera artists Ronny Jacques, Peter Croydon and George Hunter, as they followed in Hutchison's footsteps.

WINS TOP AWARD FOR COLOR PHOTOGRAPHY. *Selected by Maclean's to illustrate the first article in the Hutchison series (Dec. 10, 1955) this picture by Canadian camera artist Ronny Jacques has won the New York Art Directors' Club award for the finest color photograph submitted in 1955. The award was won in competition with submissions from all parts of North American Continent.*

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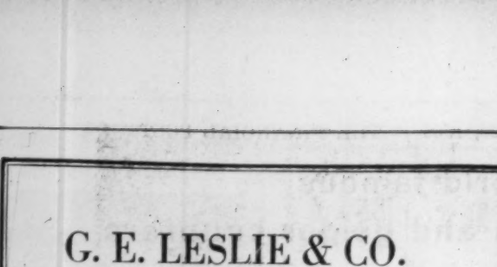

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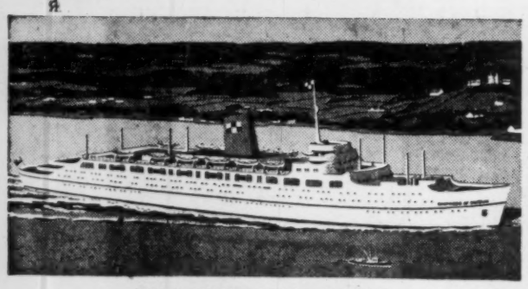

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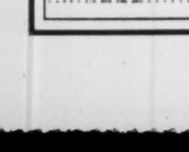

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IDA MEETING

How Atoms And Electronics Will Help Future Business

(Continued from page 1)

doubtedly beyond the abilities of the Canadian manufacturer.

The manufacturer, if he is to be in a position to supply the domestic and foreign requirements for power reactors and their components, must be prepared to give effective application to the data which are supplied by Chalk River.

This will not be an easy task, since power reactors and their components do not lie within the normal design and fabricating experience of the Canadian manufacturer. Lest we become too discouraged on this score, I might point out that a similar situation exists in other countries. Working as partners, I believe we can create a prosperous industry.

Uncertain Uranium Demands

It is impossible at this stage in the development of power reactor technology to establish firm estimates of uranium requirements for power programs. Even if we accept the most optimistic forecast for the installation of nuclear power stations, the rate of uranium production which we are now able to project for the early 60s will be greatly in excess of the quantities required for immediate use in power programs in the U. S., the U. K. and Canada in that period. This condition is likely to prevail until at least 1965, and possibly until 1970.

Demand in other countries which have embarked on nuclear power programs, such as the countries of Western Europe, is unlikely to reach substantial proportions until well into the 60s.

Because the Canadian uranium requirement for nuclear power in 1966 could be met very readily by the production from one of our smaller mines, and the requirement in 1976 could be supplied by one of our larger uranium mines, we will be dependent on export markets after 1962, as we are at present. The uncertainty as to the extent of the military demand beyond 1962 suggests that we should anticipate a situation where uranium will be sold under highly competitive conditions.

Price will undoubtedly be an important factor in our ability to obtain markets. Even if military demand continues, this is likely to be the case. I find support for this view in the recent announcement of the United States Atomic Energy Commission, in which it has established a price of $8 per lb. for a high-grade uranium concentrate for the period 1962 to 1966. So far as I am aware, none of the uranium being produced in the free world is being sold at a price as low as $8.

Our policy of permitting a full write-off of preproduction and capital expense in our uranium contracts should put the Canadian producer in a strong competitive position.

We also believe that we can make a major contribution to cost reduction by improving ore extraction methods. Extraction costs now account for about 50% of the total operating costs for our uranium mines, as compared with costs of 20%-25% for the extraction of other base metals. Eldorado Mining and Refining Ltd., in cooperation with the Mines Branch of the Department of Mines and Technical Surveys, has a major program under way in this field.

New Markets

The uncertainty as to the future military demand also suggests that we should be giving serious thought to the development of new markets. We have recently taken a step in this direction. Negotiations are under way whereby the U. K. will obtain from Canada a substantial part of the uranium requirements for its nuclear power program.

It has also been announced that we will consider arrangements for supplying small quantities of uranium to other countries for research and development purposes. The establishment of an export policy which would permit large-scale exports to other countries is complicated by the fact that uranium can be used for military as well as for peaceful purposes.

Our government has taken the position that, if possible, such an export policy should be established within an acceptable international framework. This could be an agency with universal membership such as the proposed International Agency for Atomic Energy, or it could be a regional organization such as EURATOM or the Organization for European Economic Co-operation. In either case, there would be adequate safeguards against the diversion of uranium for military uses.

IDA MEETING

Long Distance Phone Dialing To Start In Windsor In July

By THOMAS W. EADIE
President, Bell Telephone Co. of Canada

There are over 4 million telephones in Canada and they are operated by some 2,800 separate systems. Hundreds of these are small co-operatives, owned by farmers or municipalities.

In 10 years the national total of telephones and the daily average of calls, both local and long distance, have all more than doubled. In the same period, population has risen 29% and the volume of Gross National Product 38%.

We have added many million dollars worth of dial-switching equipment, hundreds of new exchanges, and a tremendous mileage of wire and cable. Extended area service has been developed for neighboring communities and for metropolitan areas.

Canadians are presently making nearly half a million long-distance calls every day, more than twice as many as 10 years ago. We feel there will be little slackening in this rate of growth in the decade immediately ahead. Good and rapid long-distance communications are essential to the national development, and they have been a priority charge for the telephone industry.

There are two aspects to all telephone development — transmission and switching. That is, carrying your call with clarity, and delivering it to the correct distant telephone.

Progress in each direction must be carefully related. Masterly automatic switching is of little value if the long-distance lines are always busy or the conversations over them are incoherent. Radio channels capable of simultaneously carrying hundreds of conversations will do little good unless the calls they carry are switched rapidly and efficiently.

So we are now engaged in two major projects—the construction of a coast-to-coast microwave radio relay system and the organization of automatic switching of long-distance traffic on a continent-wide scale.

Microwave Picture

First, here is the microwave radio relay picture. The members of the Trans Canada Telephone System are building a microwave radio relay network from Sydney to Vancouver. Part of it is operating now, and it will be completed by stages. The entire network is scheduled to be in operation by the end of 1958.

The Trans Canada Telephone System is an association of the seven major Canadian telephone organizations formed to develop long-distance service on a national basis. Each member is responsible for the construction and maintenance of installations in its own territory.

At present a microwave system operates in our Bell of Canada territory between Toronto, Ottawa, Montreal and Quebec City and in but a few months to Winnipeg. It will form an integral part of the national network. And this network will also carry television programs across Canada, serving in all some 28 Canadian cities.

For switching, the ultimate aim might be described as the transformation of the whole of Canada and the U. S. into one vast telephone exchange. There are about 60 million telephones now in service in the two countries, and in recent years they have been increasing by about three million annually.

When the new switching arrangements are fully operational you will be able to dial your own long-distance calls to practically any one of those telephones — whether in Vancouver or Seattle, Winnipeg or Chicago, just as you now dial them within your own city. However, any call which both begins and ends in Canada will travel entirely over the lines of Canadian telephone companies.

Distance Dialing

Of course this is no overnight job. The first stage is operator distance dialing, and that is already well advanced with close to half the long-distance calls made in Canada now dialed direct by the operator.

The first customer distance dialing in Canada will begin next month in Windsor, when telephone-users will be able to dial

(Continued on page 17)

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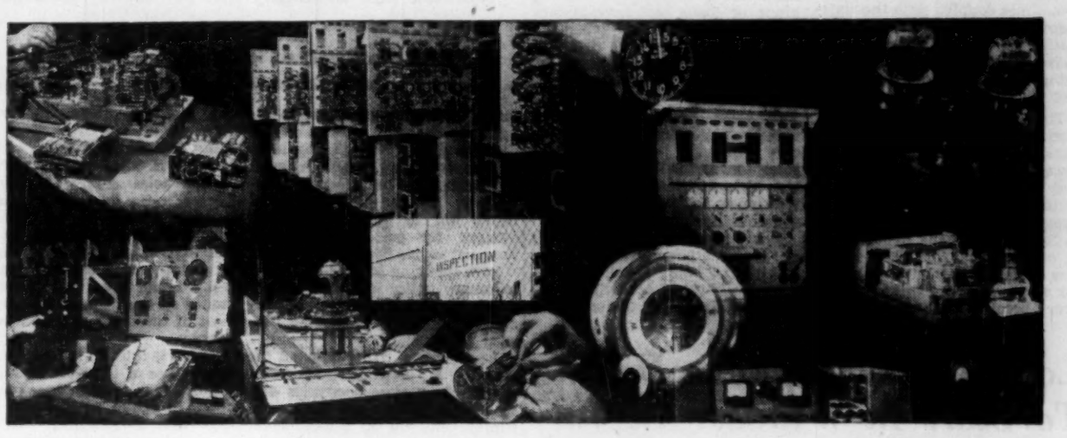

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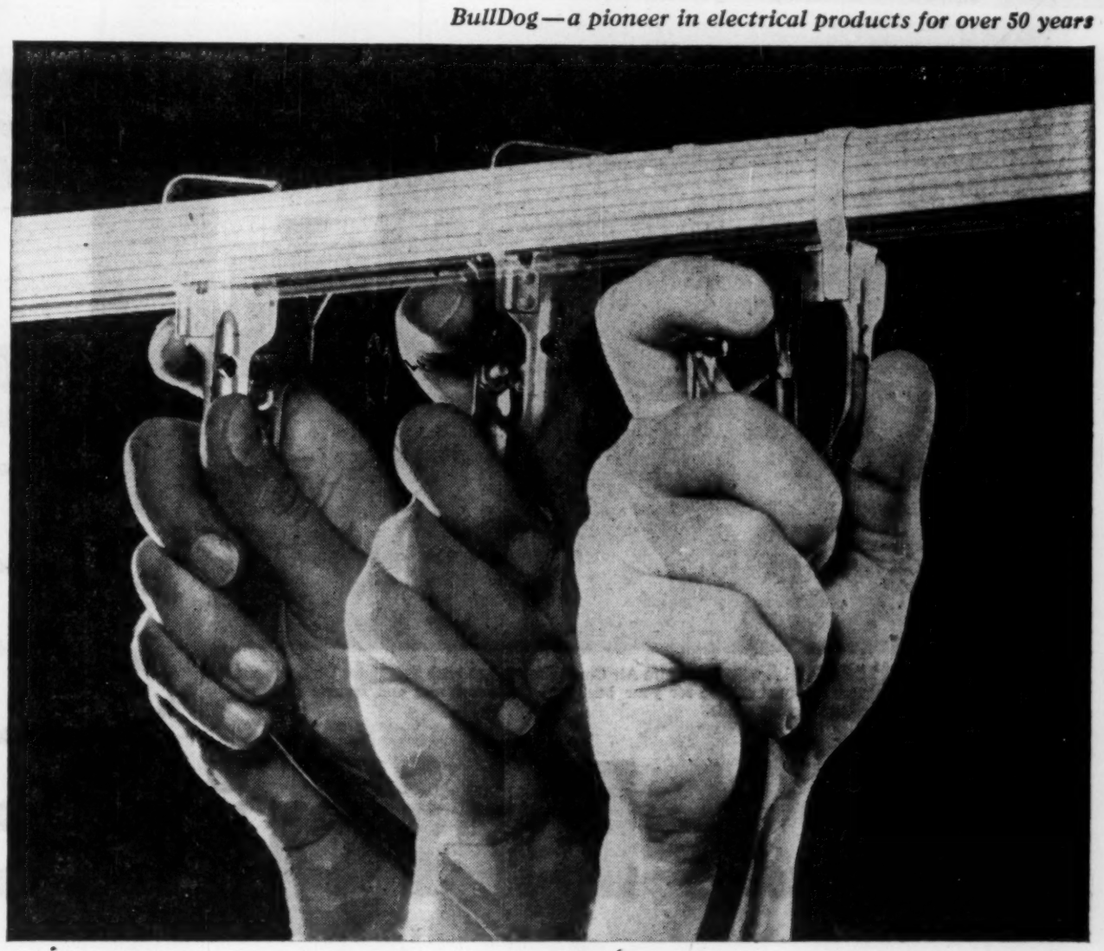

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IDA MEETING

Who Says There's a 'Credit Squeeze'?

The Paradox: Record Cash On Loan, But Complain Of Clamps

The chartered banks have record amounts of money out on loan, yet businessmen are complaining about the "credit squeeze."

At the Investment Dealers' Association of Canada annual meeting last week, James E. Coyne, Governor of the Bank of Canada, explained this apparent contradiction and also how Canada is building new flexibility into its money management operations.

This is a digest of his speech.

By J. E. COYNE
Governor, Bank of Canada

It is sometimes said, inaccurately and with misplaced dramatic emphasis, that monetary policy is now restrictive, where a year or more ago it was expansive, and that credit has been or is being restricted.

These phrases imply that there is less money available, less credit available, today than at some time in the recent past. This idea is sometimes coupled with the statement, also inaccurate, that the raising of the bank rate by the central bank was intended to bring about monetary restriction and did so.

The facts are that the total money supply (currency and bank deposits) has not been reduced, but has continued to grow, and that credit has not been restricted but has continued to expand. Savings are continuing to rise, both in bank deposits and in other forms, long-term investors have more money available for new investment this year than ever before; economic growth this year will be the biggest in our history.

Bank loans have increased every month so far during the period of so-called restriction, although it seems probable that the rise in total bank loans will slow down before very long; some categories of loans may decline while others go on increasing.

It is always possible, indeed it is normal, for bankers and investors to take different views from time to time of various kinds of loans and investments. In particular, at a time when the demand for money, the desire to borrow money, exceeds the supply that may prudently be made available, it is inevitable that some potential borrowers will be disappointed, some financing will have to be postponed, some loans will fail to meet the higher standards of creditworthiness adopted by lenders in such circumstances.

The projects for which funds are required have given every indication of being more, in total, than the physical potential of the economy. To permit the supply of money to become excessive, to expand to the full extent of the demand at the pre-existing level of interest rates, would in such circumstances be clearly inflationary; it is the duty of central banks not to give way to the demand for such an excessive financial expansion.

I am speaking of over-all totals; monetary policy as such does not deal with the allocation of financial resources to particular persons or enterprises or regions.

At a time of rising demand for money, a central bank will usually buy some securities and so add somewhat to the money supply, but not at a fixed level of interest rates or of security prices.

Restrains Rates

One effect of the normal reaction of a central bank to an increase in the demand for money is therefore to meet part of the demand and to that extent damp the rise in interest rates. Central bank action does not usually cause changes in interest rates, but restrains them, moderates them.

But since only part of the demand is filled by an increase in the total supply of money, interest rates do rise until there is some abatement of demand, and/or there is a change in the distribution of the existing supply of money, some existing holders being found who will put their money at the disposal of some at least of those who are seeking to borrow.

There is thus an increase in the rate of use of the existing money supply, a shift from inactive deposits to active, as it were. It is important to recognize that this potentiality always exists to a greater or less degree, and can at times work against central bank policy.

It is particularly important that the process of activation of inactive money should commence before inflationary developments gain too much strength, rather than that expansion of the total

(Continued on page 16)

Long Distance Phone Dialing To Start In Windsor In July

(Continued from page 15)

their own calls to Detroit and a wide area of southern Michigan.

It will be introduced on a more considerable scale in 1958 in Toronto, and the following year in Montreal, and from then on steady extension may be expected.

The machinery for such a project has two essential elements. First, installations in strategic locations which will direct any long-distance call to its destination automatically and at high speed. Second, a network of alternate routes flexible enough to carry the call there without delay.

We have opened automatic long-distance switching centres in the past 12 months in both Toronto and Montreal. Similar centres are scheduled for Saint John, N.B., and Regina. The microwave radio relay system will form the main artery of the Canadian long-distance network, and it will connect with the extensive network that is being developed in the United States.

These projects are far more than fascinating examples of technical progress. The fundamental fact is that only through high-speed automatic switching and microwave radio relay or its equivalent can we handle efficiently the rising volume of long-distance calls.

First Electronic Office

In 1958 the Bell System is going to test its first electronic office. Even in the modern telephone exchange, switching is still an electro-mechanical operation, however rapid. With the use of transistors and the various other miniature devices for storing information and making connections, the completely electronic exchange begins to take shape.

So little electric energy is required to transmit telephone communications that these tiny solid devices will be able to handle vast quantities of traffic.

There will be no mechanical movement, just the ultrarapid journeying of electric current through thousands of tiny, fantastically sensitive components. We may have to wait quite a time before the electronic office becomes standard equipment, but I have no doubt it will be one day — and bring us significant savings in construction and operating costs.

But all of this requires a high level of capital investment.

$1,500 Million Investment

The total investment in plant and equipment of the telephone industry is now in the order of $1,500 million. Because of the vast distances that have to be traversed and our even more rapid postwar growth, investment per telephone is higher here than in the United States.

At present the industry is spending some $200 million annually on new construction. In the brief to the Gordon Commission on behalf of the Trans Canada Telephone System, expenditure over the next 25 years was estimated at over $3,000 million. By 1980 the total investment will be about three times its present figure.

I see no reason why the major part of this vast sum should not be obtained from Canadian sources. This is surely a most worthwhile field for Canadian investment, as it is for Canadian endeavor. As Canada grows, expanded and improved telecommunications services are indispensable to meet the needs of business, of government and of individual Canadians.

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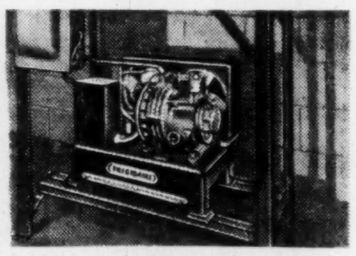

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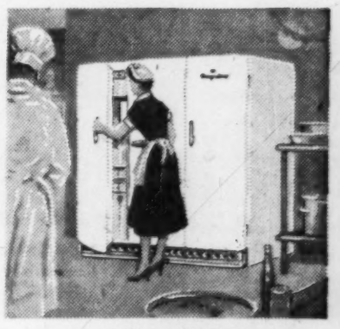

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IDA MEETING

Why 'Credit Squeeze' Gripes?

(Continued from page 16)

supply should continue without limit until it is found necessary to restrict the supply under conditions where very drastic action might be necessary, because the restriction would then have to be sufficient to offset the belated process of activation of previously inactive holdings on a very large scale. The change in interest rates when it finally occurred would then be violent rather than gradual, and failure to moderate earlier the expansion of credit would lead to a severe contraction.

Perhaps all this sounds rather theoretical, but it is in fact a very practical matter in central bank operations and was very much in our minds in connection with the developments of the past twelve months.

When the demand for money continues to rise after a condition of generally full employment has been reached, the rise of interest rates in the market may continue to the point where another method of increasing the total money supply may be involved, namely recourse by the chartered banks and by money market dealers to the central bank for short-term loans or purchase and re-sale arrangements.

As long as money can be obtained elsewhere at a better rate, no one tries to borrow from the central bank. But if other interest rates rise above the existing level of bank rate, then there is a natural tendency for the chartered banks and money market dealers to turn to the central bank with its cheaper rate.

If the central bank is not prepared to increase the over-all money supply without limit by purchasing all the securities offered to it at a given level of security prices, it would be frustrating its own objectives to do so by making loans on a large scale. It must, in such circumstances, raise its lending rate, the bank rate.

In theory the bank rate could be changed every day in very small fractional amounts, but it is usually considered more convenient to do it in rounder amounts at intervals. The Bank of Canada Act requires that the rate shall at all times be made public.

More Flexible Use

In recent years much more frequent and more flexible use of bank rate has been noticeable, particularly since 1951 in the United States, and by February 1955 the development of our own money market had reached the point where bank rate could be put into commission as an operating factor rather than merely as a symbol of a major change in the economic outlook.

The question of timing remains of importance. Unless the central bank is going to tie its rate to some fixed relationship with other rates, Treasury Bill rates, for example, the time of a change in bank rate may seem on occasion to lag behind, or alternatively to lead the market. A change in the bank rate in either direction may be followed by further market change in the same direction, though not invariably so.

Upward movements are more likely to synchronize closely with market changes than downward ones, and an upward change retains some symbolic significance, arising out of the circumstances which give rise to it, for it indicates that the central bank feels that the increase in the demand for money at current levels of interest rates is excessive.

The movement of bank deposits over the past twelve months provides a good illustration of several points made above and of the part played by investment dealers in the adjustment of demand and supply in the financial field.

Total Canadian deposits of the chartered banks (adjusted for changes in "float") rose by $550 million in the 12 months ending May 30, 1956. This was more than accounted for by a rise of $310 million in personal savings accounts and of $325 million in Government of Canada balances. All other deposits (adjusted for changes in total float), i.e. the bulk of the "commercial money," fell by $80 million for the period as a whole, despite the great rise in bank loans, in general economic activity, and in spending of all kinds.

In the twelvemonth, bank loans and non-government investments rose by $1,500 million, or 25%. During the early part of this period there was in consequence some expansion of total bank assets (and therefore of deposits) but to an increasing extent the expansion of the chartered banks' loans and non-government investments had to be financed by the liquidation of their holdings of government securities.

The one has been fully matched by the other for the past six months, and for the 12 months as a whole the reduction in chartered bank holdings of government securities amounted to $925 million. This was the net result of an increase of $325 million in Treasury Bill holdings and a decrease of $1,250 million in holdings of government bonds.

Accommodating such a huge adjustment in the distribution of government securities (in addition to the large sale of Canada Savings Bonds) was quite a challenge for our financial machinery, and those who worked together to make it possible, and particularly the investment dealers, can take a considerable measure of satisfaction from the manner in which the challenge was met.

On the basis of preliminary estimates for the end of May, it appears that, apart from Canada Savings Bonds, $400 million in government securities was taken by the general public, another $400 million by government investment accounts (using money which originated with the general public), and about $40 million was accounted for by net reduction in the outstanding amount of direct and guaranteed marketable securities of the Government of Canada. Only $80 million was added to the holdings of the central bank; this was approximately equal to the increase in active note circulation.

The $440 million taken in one form or another by the Government and government accounts was not provided by running down government cash balances; on the contrary these rose by about $300 million. Nationally, you might say that the increase in Canada Savings Bonds bought by the general public to the net amount of $340 million (net of redemptions during the period) provided most of the funds used in the acquisition of securities by government accounts; an alternative way of looking at it would be to match off the net increase in Canada Savings Bonds with the increase in the Government's bank balances. On this view, the funds used to purchase market securities for Government accounts were provided by the general public in a different form, namely, in part by an excess of Government revenues over expenditures, in part by public purchase of government annuities, in part by funds accruing to the Superannuation Fund, and in part by other capital receipts of the Government.

While the net increase in total holdings of government securities by the Bank of Canada was not large, there was a big change in the character of our holdings, chiefly as a result of the retirement of our holding of $675 million in six-month Treasury Notes. The Government effected this retirement by increasing the Treasury Bill issue at intervals during the period, by a total amount of $700 million, of which the Bank of Canada took $190 million, the chartered banks $330 million, and the general public $180 million. In the category of government bonds, as distinct from Treasury Bills and Treasury Notes, the Bank of Canada added $565 million to its holdings, so that its total portfolio, as already stated, rose by about $80 million.

Having in mind the effect of the sale of the new series of Canada Savings Bonds in absorbing a substantial amount of personal savings, the achievement of investment dealers in the redistribution of marketable government securities was very notable. This was also a period in which life insurance companies were further reducing their holdings of government bonds in order to increase their mortgage loans and other investments — i.e. for the same general purpose as the chartered banks. Non-residents on the whole were also selling government bonds in Canada. Finally, outside the field of Government of Canada securities, Canadian investment dealers probably raised more money in the period in question than in any other 12 months, on behalf of Canadian provinces, municipalities and corporations.

There are bigger challenges to

(Continued on page 19)

Processed Sheep Skin Not Fur, Supreme Court Reverses Rule

A determined fight by a Toronto firm against what it maintained was unfair taxation has met with success with a recent Supreme Court of Canada ruling which has upset an earlier Exchequer Court decision.

The whole issue at stake was whether mouton — processed sheep skin — is to be considered a fur or not. Universal Fur Dressers & Dyers, Toronto, pioneer in Canadian production of mouton and shearlings, has persistently maintained that it was not and that it was unfair and incorrect to tax it as a fur product.

A March 1954 decision of the Exchequer Court ruled that mouton was a fur and therefore was subject to a special 15% excise tax. As a result Universal Fur Dressers was ordered to pay $573 in tax on marketed mouton.

But Universal Fur Dressers head, Samuel Moskoff, who has been fighting the "fur" ruling for almost 10 years now appealed the Exchequer ruling to the Supreme Court of Canada. The case was heard in April and just this last week the reversed decision was announced.

"In my opinion the Merino sheep is a wool-bearing animal and not a fur-bearing one . . . and it is not, and could not be, transmuted into a fur by the processes to which it is subjected," Mr. Justice John R. Cartwright stated in his findings.

Since the 15% tax on dressing and dying is not now in effect the ruling will have no influence on price of mouton coats, as far as tax is concerned. In any future taxation move, however, affecting processed furs, mouton would likely be exempted.

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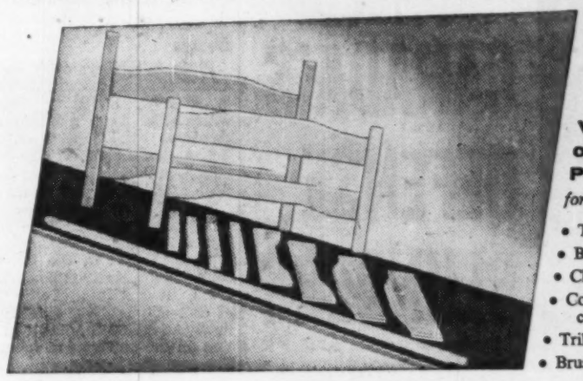

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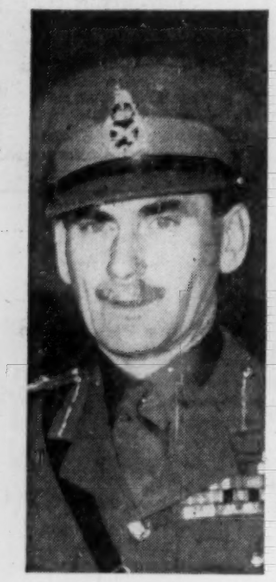
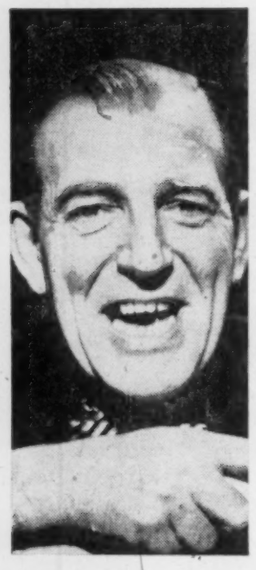
MACLEAN'S MAGAZINE



Lt. General Guy Simonds reveals CANADA'S DEFENSE BLUNDERS

"For the sake of Argument" MORLEY CALLAGHAN says Why shouldn't we be like the AMERICANS ?



JOE McCULLEY: Can they make him a TV Star?

BY BARBARA MOON

SPECIAL FEATURE

A souvenir album of CANADA

NINE PAGES OF FULL-COLOR PHOTOGRAPHS

After 20,000 miles' travel across Canada, Bruce Hutchison and photographers Ronny Jaques and Peter Croydon review in pictures and text their rediscovery of Hutchison's

THE UNKNOWN COUNTRY

Read it in the new exciting MACLEAN'S

Canada's National Magazine • A Maclean-Hunter publication

Growth

Manufacturing plants new to Canada, expansions of existing industry across the nation

Areas, industries are invited to report their progress in this column.

Office Equipment

Another sign of the rising tempo of manufacturing in the office equipment field is the latest expansion of VISIrecord of Canada Ltd. which moves into its new and bigger plant in Toronto early next month.

The new premises at Roselawn Avenue will provide 11,000 sq. ft. of plant and office area—twice the space of existing premises in King St. W.—and also allows for growth. The move coincides with the firm's 10th anniversary in the Canadian equipment field.

VISIrecord designs and manufactures a wide range of office equipment and filing systems including vertical and visible record systems, data processing systems, posting units, etc.

• • •

Drugs

Plant test laboratories and administrative offices will be housed in a new, one-story building which has been purchased in Montreal by Schering Corp. of Canada, subsidiary of one of the major producers of pharmaceutical products in the U. S.

The building which was specifically designed and constructed for Schering's specialized use, represents part of the Canadian company's current expansion program. It is located at the corner of Sax and Labarre Streets in a newly-developed industrial section on the outskirts of Montreal. The company bought the building from Industrial Realties Ltd., Montreal with mortgages financing arranged by Tankoos Yarmon Ltd., Toronto realtors.

• • •

Kitchen Cabinets

Industrial development in the Hamilton area continues at a fast lick. Among six new projects lined up by Hamilton District Industrial Commission is a woodworking company now employing 25 men in fabricating kitchen cabinets for home builders. The company is LaSalle Cabinets Ltd. which has rented a two-story plant of over 7,000 sq. ft. in the centre of the city.

• • •

Pipe Preparation

F. E. Shaw Co., pipeline contractors of Sarnia, Ont. has established a pipe preparation branch on Highway No. 53 south of Hamilton near Hannon. A cement block maintenance and office building is being constructed on the seven-acre site.

• • •

Pre-Fab. Buildings

Production of pre-fabricated steel buildings has started in the new Canadian factory of the Butler Manufacturing Co. (Canada) on the Queen Elizabeth Way in Nelson Township, 10 miles east of Hamilton. Some 25 men are employed initially in the 90,000 sq. ft. plant but this will increase considerably as production nears its peak.

• • •

Freezing Plant

The commercial freezing plant of Langs Foods Ltd., Hamilton, in the newly acquired Saltfleet annex is nearing completion. First production is anticipated in June. The 40,000 sq. ft. plant will serve food companies and growers in the Hamilton-Niagara area.

• • •

Heating Units

Brantford Engineering & Manufacturing Co. of Hamilton is building a small plant to assemble its line of specialized industrial heating equipment. The plant is on Highway No. 2 just west of Burlington. Production will start about midsummer.

• • •

Office Aids

A company manufacturing duplicating equipment and supplies has made its second expansion move within six months.

Toward the end of last year, A. B. Dick Co. of Canada, Toronto, opened a branch office in Vancouver for B.C. sales and service operations. Now under construction is a new plant and general office in Toronto.

Executive Vice-President Angus E. Wood expects the first building, with 27,000 sq. ft. of floor space on a 2½-acre site, in north Toronto, to be ready for occupancy soon.

A. B. Dick Co. recently expanded its products to include equipment and supplies for offset, spirit and Azograph duplicating processes. The Toronto plant will enable the company to meet increased demand for products in these fields as well as mimeographing.

• • •

Mechanical Packing

Now operating from a Toronto plant where all operations of its main Montreal plant will be duplicated to service the Ontario market is Albion Asbestos Packings Ltd.

Albion, which produces and supplies mechanical packing and industrial gaskets of asbestos, rubber and metal composition for industrial use, recently opened office, warehouse and manufacturing facilities in the metropolis.

The company is also sole Canadian distributor for graphites and greases produced by Joseph Dixon Crucible Co., U.S., and for packings made by Allpax Co., U.S.

• • •

Window Channel

An important stage in the expansion plans of Standard Products (Canada) Ltd., Windsor, Ont. was reached last week when construction began on a 48,000 sq. ft. addition to the company's existing 19,500 sq. ft. plant on Prince Road.

A subsidiary of The Standard Products Co. of Cleveland, Ohio, the Canadian company claims to be the largest producer of automotive window channel and weatherstrip in this country and a major producer of stainless steel moldings, rolled metal parts, and rubber and cloth products.

The addition will cost about $300,000 and is scheduled for completion in August. It will absorb all operations now conducted at the company's Mercer Street premises in Windsor, and also handle new orders. It is expected to bring an increase in employment.

Sask. Pipeline Nears End As More Hearings Start

From Our Own Correspondent

REGINA — Westspur oil pipeline serving southwestern Saskatchewan now more than half completed is nearing Frobisher.

If the favorable weather conditions hold, the line should be completed to the Midale field before fall.

First section of the line from Cromer, Man., to Alida, Sask., was completed last week and has since been undergoing hydrostatic tests.

Originally the Westspur Pipe Line Co. has expected this section of the line to go on stream in July, but now its general superintendent, Allan McRae, expects oil to be flowing before the end of this month. The Alida terminal is nearly completed and the other terminals at Frobisher, Steelman and Midale are well on their way to completion.

Fast progress is also being made with the gathering system especially in the Alida field.

Pipe is stored at Nottingham, Sask., where a yard wrapping system has been set up.

Under good conditions gas pipeline can be laid at the rate of at least five miles a day.

Shareholders in Westspur are 16 operating oil companies, all interested in developments in the southeastern part of the province and most of them in other parts of the Williston basin.

Pipeline Hearings

Concurrently, hearings started June 15 before the Saskatchewan oil and gas conservation board on applications from two companies seeking to build more pipeline to service the general Dollard area in southwestern Saskatchewan.

First to be introduced was submitted by South Saskatchewan Pipe Line company, who plan to build a 58-mile line from Dollard to Cantuar (in the Fosterton-Success area) to connect with the existing line from the Fosterton field, which hooks into the Interprovincial line at Regina. This line carries oil down to a take-off point in Manitoba where it links with a U.S. line running to a refinery in St. Paul, Minn.

Reason for export of this oil is that it is "sour" (high in sulphur) and of medium gravity and therefore not acceptable to refineries in Regina and Moose Jaw. Some has been used, however, by mixing it thinly with "sweet" crudes from Alberta.

The South Saskatchewan Pipe Line Co. is owned jointly by Mobil Oil (Canada), Woodley Canadian Oil and Southern Production Co. Inc.

Introducing the company's case, M. A. MacPherson, Que., said that "to build two pipelines where one will do will invite disaster for both."

The other applicant, recently incorporated Royal Pipe Line Co., proposes construction of a 367-mile line, including a link between the Cantuar and Dollard fields and the Rapdan and Dollard fields. The trunk line runs through the Williston basin, linking up with the Interprovincial line at Glenavon, Sask., connecting with Midale en route. Royal is backed by D. D. Feldman of Texas, and other American and Canadian interests.

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Our progress is due to our concern for all policy-holders — our thorough service has been so successful that today, Wawanesa protects the property of more Canadians than any other company!

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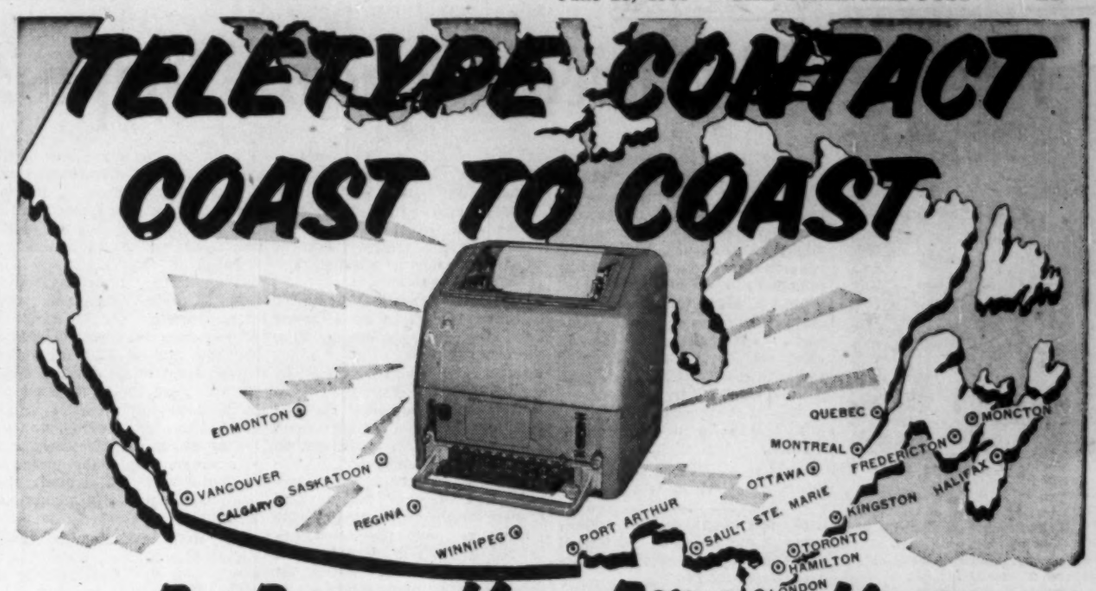

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- *Automatic clearing of all balances and totals increase operator efficiency*
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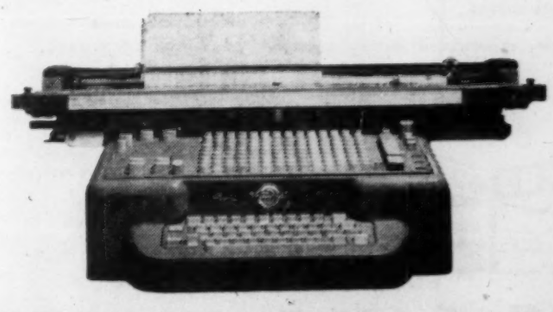


THE NATIONAL CASH REGISTER COMPANY OF CANADA LIMITED
Head Office: Toronto • Sales Offices in Principal Cities

you had your doubts

...we don't blame you

You may have suspected that everything's not as it should be on the farm. You're so right! But overall conditions are much better than is generally believed, as the table below indicates.

FARM CASH INCOME — ALL CANADA

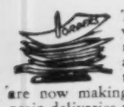
	Farm Cash Income (millions)	No. Farms	Average per Farm
1941	$ 896.4	677,465	$1,323
1951	2,811.9	623,091	4,513
1955	2,352.6	595,000	3,954

Income per farm in 1955 was 3 times the 1941 figure. It was $560 below 1951, but you will remember that 1951 was an exceptional year.

Just to get this in perspective, 1955 DBS Farm Cash Income estimates for B. C., Ontario, Quebec and the Atlantic Provinces indicate real prosperity. In every case, income is running at a high level.

The prairie provinces, Saskatchewan in particular, have been the soft spot in the farm economy recently. While last year's near-record crop increased Saskatchewan's Farm Net Income to 227% of the 1954 total, over half of Canada's wheat stocks are still in farmers' hands.

But the turning point has been reached. Now, despite a slow start, wheat sales for the current crop year are running ahead of the same period a year ago.



This augurs well for the months ahead. Western farmers are now making substantial grain deliveries to their local elevators. At a result of this, expenditures for capital goods, consumer necessities and luxuries will show a sharp increase. Many advertisers are already making a concerted effort to capture a major share of these sales. Advertising space placed in farm papers is running well ahead of 1955.

A SUGGESTION

Use large space in The Country Guide, the only Canada Wide Farm Monthly, reaching almost 300,000 of Canada's 504,000 English speaking farms. It's mass coverage — but it's class coverage. Take a look at the latest issue of The Country Guide—its general make-up, editorial content, the prominence of advertising achieved through the use of a magazine format. If you haven't a copy, let us send you one.

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THE Country GUIDE

WINNIPEG 2, CANADA

Canada's Only National Farm Monthly

Self-Employed Renew Pension Pleas

U.K. Tax Concessions Inspire New Pressure Here

By DALTON ROBERTSON

The recent decision of the U. K. Government to make tax concessions to help self-employed persons provide for retirement, has raised new hopes for similar action in Canada.

Until now, Ottawa has resisted pressure from this group—doctors, lawyers, accountants, grocers, druggists, etc. — who sought to have their contributions to pension schemes exempted from income tax. Salaried employees of companies which have an approved pension plan receive this special tax treatment already, but people who work for themselves have received no such concessions.

Strengthened by the U.K. precedent, however, various individuals and groups are arming themselves for another go at the minister of finance. The proposed exemptions in the U. K. have already been drawn to his attention.

The Case For

The self-employed businessman or professional man states his case this way: When it comes to making contributions to a retirement plan, we believe we should have the same taxation privileges as employees who work for a company where there's an approved pension plan. The employee's contributions are exempt from income tax. The employer, who usually makes a contribution, is also freed from taxation on his payment.

When the employed person retires and his pension starts to pay off, this income will be taxed. But at that point taxation is not likely to be as heavy as in the higher-income period when he's making contributions. Thus the employed man not only gets tax exemptions which help him build toward a retirement income, but he is able to defer income tax until a time when his total income is likely to be smaller.

Contrast this with the man who is saving for his own retirement fund. He has to pay income tax on his savings through earning years when his tax rate is highest. And he has, the self-employed point out, no employer to double his savings.

Government Reaction

Several organizations—primarily those representing professional men—have been asking the federal government to consider changes in tax legislation for a good many years. Early in 1954, 12 interested groups spearheaded by the Canadian Bar Association, Canadian Medical Association and Ontario Chartered Accountants made a joint attack and presented a detailed brief to the minister of finance.

Douglas Abbott, then minister of finance, did not see his way clear to do anything about their requests. His successor, Walter Harris, has also been reluctant to tackle the problem.

Mr. Abbott summed up his stand saying: "The implications of such a move are extremely far-reaching. It is difficult to know what volume of savings would be attracted by this monetary incentive, but I am inclined to think it would be extremely substantial . . . I have not felt that I wanted to take the responsibility for such a far-reaching move at this time . . . The difficulties still appall me."

Today's Conditions

That was 1954. Today, say the self-employed, conditions are different and have changed enough to let the government alter its stand:

—There's now a precedent. With the British concessions (which the U. K. Government calls "a measure of fiscal justice") the Canadian Government has less real reason to hedge longer on the issue; it can be done.

—Concessions would complement the government's monetary policy. Exemptions would encourage saving, which would be to the good if the government is as seriously concerned about possible inflation as it makes out.

—It's timely. The pressures of an election year might make 1957 the logical moment politically to introduce tax exemptions for the self-employed.

But chief stumbling block for the self-employed's cause is the fact that exemptions would cost the government a substantial sum in lost tax revenues.

In their joint brief of 1954, the associations requesting changes declared—and still do—that their members receive inequitable and unreasonable treatment under the Income Tax Act because:

—Preparing for a professional career calls for long training and a large capital outlay in no way recognized for tax purposes.

—During the relatively short period of peak earning power, income tax rates are so high as to make it exceedingly difficult to compensate for earlier expenses and lay aside for later retirement at the same time.

—Professional people rarely build up a business organization with substantial capital reserves which will provide continuing income; rather earnings drop sharply with any lessening of the energy or capacities of the individual.

The Canadian Government has been reluctant to reshape its tax legislation to ease what the self-employed consider a discriminatory situation. One big reason: It would be difficult to make an adjustment for one group of taxpayers yet maintain a tax incidence equitable to all. And, by no means a small consideration for the budget-makers, it would involve a substantial loss of income for the federal treasury.

Self-employed are pointing to the recent British concessions. If England, in spite of heavy financial commitments, has accorded tax relief to the self-employed, why can't Canada, they ask.

U. K. Plan

Full details of the U. K. plan are not yet available. But in bringing down the British budget, Harold Macmillan, chancellor of the exchequer, stated:

"I propose to give effect, though in a simplified and modified way, to the recommendations of the Second Millard Tucker Committee on relief to the self-employed in respect of provision for retirement. This will grant relief from income tax and surtax within certain limits in respect of premiums paid to provide a deferred annuity on retirement.

"It will apply to professional men in practice, to individuals and partners in businesses which are not companies, to controlling directors of companies, and finally to employees who are not entitled to any benefit under schemes set up by their employers."

Stating that a condition of tax relief would be that benefits secured by premiums be payable as annuities and not as lump sums, Mr. Macmillan said that tax exemptions would be limited to pension contributions not exceeding £500 or 10% of earned income in any one year. Beneficiaries, he thought, would range from city accountant to village grocer.

Two related concessions were also announced. The Chancellor plans to relieve from income tax life insurance company annuity funds insofar as they represent invested premiums arising from deferred annuity business for the self-employed. A further exemption stated "purchased life annuities not connected with a pension scheme should not be taxed in full, the part representing a return of the purchase money should be exempt."

These steps will be a strong anti-inflationary force, the British Government believes. Substantial savings will accumulate, they think, as people take advantage of the exemptions possible in accumulating a retirement fund.

Biggest block to the introduction of tax concessions will be the possibly large loss of government revenues. Rough estimates place this at a minimum of $60 million to $70 million if the self-employed are accorded an exemption for pension plans of 10% of yearly earned income.

Since this is a fair sum for the government to forego—especially when it still officially argues that there is nothing unfair about the present system—some groups of the self-employed predict that it will have to make the most of its concessions. With an election looming, they feel that this would be the opportune time for an announcement.

While tax concessions, if made, would in all likelihood apply to all self-employed, professional men feel most strongly about the necessity for them. It has been pointed out to the professional man that he could incorporate and thus gain certain tax advantages. But the professionals consider this would be detrimental to their professions, their clients and to society itself.

Their reasoning: A professional service to be worthy must be a personal service. Therefore it cannot have created an artificial person in the form of a corporate being, between the giver of the service and the recipient.

There is another side to the view that tax concessions for the self-employed are a measure of fiscal justice. The employed person who contributes a tax-exempt portion of his earnings to a pension fund does not control that money and cannot obtain it for emergencies. Meanwhile, the self-saver can at least save any way he wants — stocks, bonds, mortgages, real estate — and be free to liquify his assets, or use them as security for loans.

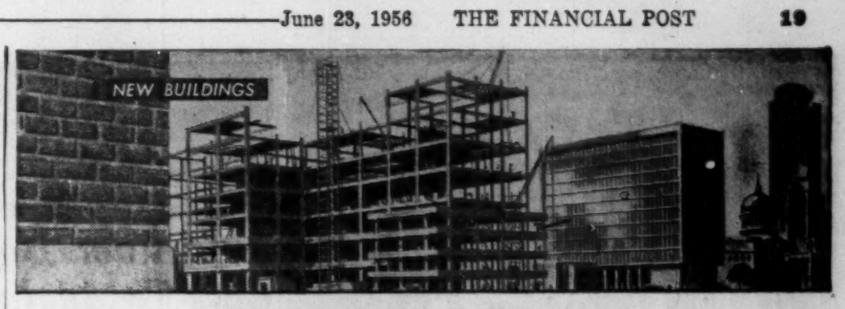
Against this, the self-employed are saving without the benefit of tax exemptions, employer contributions or deferred income tax.

Southern Canada Power Earnings Up

MONTREAL (Staff) — Southern Canada Power Co. operations for the eight months ended May 31, 1956, resulted in a surplus of $389,712 compared with $246,613 for the same period in the previous fiscal year.

Gross earnings for the eight months totaled $6,609,283 against $5,867,408. Expenses, including interest and depreciation were higher at $4,115,261 against $3,640,234, while taxes were also up at $1,124,161 against $1,116,412. Dividends were unchanged at $864,149.

Surplus for May amounted to $56,679 against $40,341 for the same period of 1955. Gross earnings were $836,948 against $758,946. Expenses, including interest and depreciation, amounted to $508,624 against $460,863. Taxes were $163,626 against $149,723.



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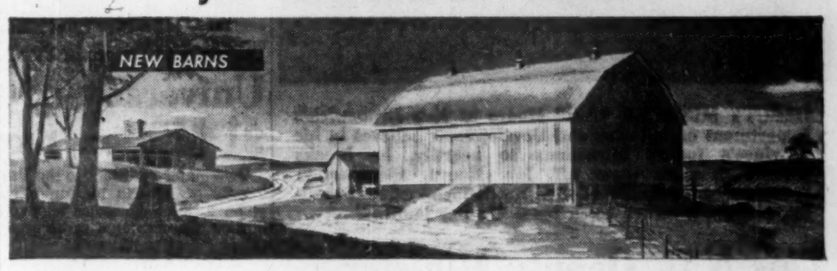

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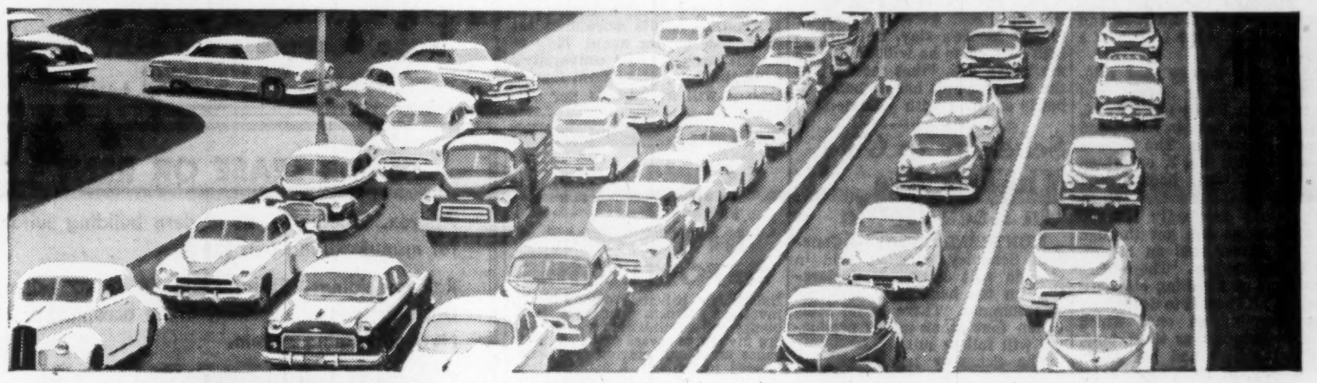
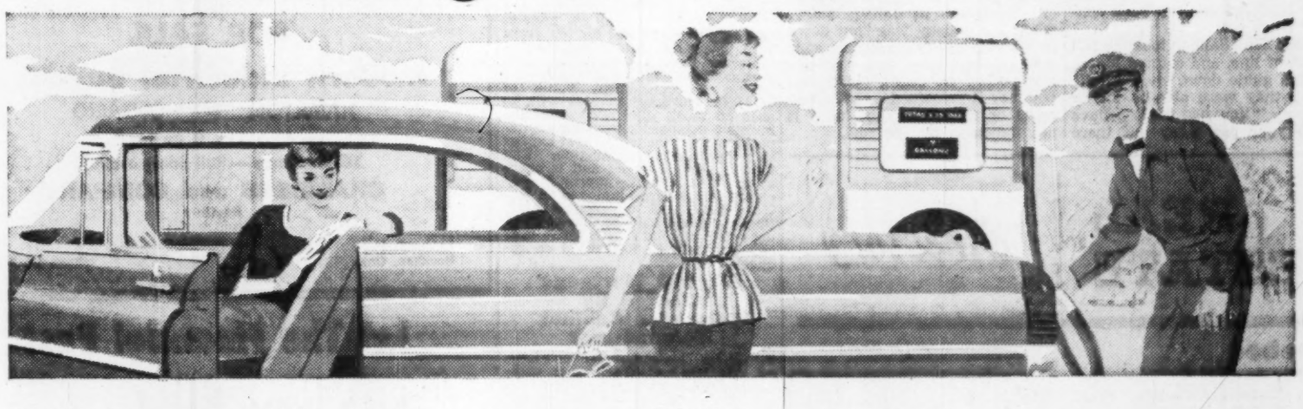


Why did we pledge



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"We will not permit a single competitor to offer gasolines superior to our new B-A 88 and 98 gasolines."

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50TH YEAR

THE BRITISH AMERICAN OIL COMPANY LIMITED

IDA MEETING

Record Cash Out On Loan — Why 'Credit Clamp' Gripes?

(Continued from page 17)

be faced in the future, greater achievements to be sought.

The short-term money market has made remarkable progress in the last two or three years, but should be expected to expand and improve substantially in the years ahead. Here, as in the other areas of investment banking, there is need of more capital, for one thing, for the carrying of larger positions, and of improved facilities for arbitraging one maturity against another.

Again, the sale of equity-participation in Canadian enterprise to Canadian investors, although you come up against the stonewall of the life insurance companies, will offer an increasing field of activity for a long time to come. Progress was very noticeable last year, particularly in the case of "blue-chip" stocks of long standing.

In the case of both new issues of common and preferred stocks and of re-distribution of holdings up for liquidation, I know that the members of the Investment Dealers' Association of Canada are as keen as anyone to maintain and increase the Canadian share. This is a field in which several of the chartered banks have on occasion given a lead and played a prominent role by aiding with temporary financing, and I am sure they will be responsive to further opportunities of the same sort.

Another field in which the public interest would be served by an expansion of the activities of investment dealers is the development of a secondary market for mortgages on residential properties. In relation to securities, dealers have long recognized their responsibility to develop and improve secondary markets, the after-issue or between-issues market, in the interest of borrowers and lenders alike. Only in this way can investments be rendered liquid, that is, provided with a market in which sellers can find buyers at any time without too great a change in value resulting from the activity of any one buyer or seller.

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DEPUTY MINISTER "Bill" Moore of New Brunswick's Department of Industry and Development believes in his province's tourist attractions so heartily, he breaks records to show them off. Mr. Moore, a self-styled "amateur" angler, landed five Restigouche salmon totaling 112 lb., a record catch for a 2½-day jaunt.

This N.B. Deputy Minister Proves Tourist Attractions

From Our Own Correspondent

FREDERICTON, N.B. — W. A. "Bill" Moore, New Brunswick's deputy minister of industry and development, calls himself an amateur in the intricacies of Atlantic salmon angling, but what he did this week over on New Brunswick's famous Restigouche River would put most professional fly-casters to shame.

He caught five salmon whose aggregate weight was 112 lb., and the biggest scaled 33 lb.—a three-year record for those waters. The others weighed 29, 21, 19, and 10 lb. The fish were taken near Allie Murray's camps, in from Kedgwick. There is no record of anyone having done better in a 2½-day junket.

The popular deputy used a 10-oz., 10½-ft. Hardy (Wye) rod with a four-in. Hardy Perfect reel, double-tapered Ashaway line, and 200 yds. of backing. The fly was a Silver Doctor No. 2, on which all five fish were hooked and landed.

"That was one badly tattered fly when those fish got through with it," Moore said on his return to Fredericton. "There were no feathers or anything else left; those fish just beat it to death."

For the biggest one, which scaled 33 lb. and was 46 in. long, "Bill" gave luck and his guide, Wilfrid Roy, of Kedgwick, a lot of the credit.

"The biggest one I ever caught before was 12 lb. When this one got hold and took off right away with 75 ft. of line I knew I really had something on," he said. "You don't have time to get excited . . . you're too busy . . . I fought him for an hour and a half. My hands were blistered and my back aching."

Twice King Salmon took the full length of line, and carried Moore and his guide down river a mile before they were able to finally net him. "You just can't believe that's your fish away out there when he rolls over looking like a six-week-old pig in water," Moore said. At one time the big one tore away with 100 ft. of line and 175 yds. of backing.

Moore said the smaller fish were more frisky, and jumped higher, but the big one was plain silver thunder. "All of them," he said, "were fun to catch."

Water conditions were about right for fishing earlier this week on the Restigouche waters, being high and a bit murky. Two of Moore's fish were taken in Pool Four, two in Pool Eight and one in Pool Two. The prize one was chased and netted in Pool Eight. Six other rods were on the water during Moore's stay, but all the luck seemed to be with him. "To me," says Bill, "that means that the amateur still has a chance to battle and win with a salmon."

Schenley to Give Whisky's Age On Each Bottle

MONTREAL (Staff) — Canadian Schenley whiskies sold in Canada will carry age declaration on the back of each bottle this summer. There is no indication that other major producers will follow suit.

The Schenley labels will indicate that every drop of whisky has been aged continuously in small oak casks for a given minimum number of years; Canadian Schenley for eight years; Reserve six years; Golden Wedding five years; FiveThirty, four years and Tradition, three years.

The government bonding label on all liquors in Canada shows when the whisky was "put down in wood", certifying it has gone through regulation two year aging period in casks. However, whether it remained exactly two years or stayed for six more is not indicated by the seal.

$10-Million Hotel Contract Goes To Anglin Norcross

A $10 million general contract for the new 17-story, 400-room wing of the CPR's Royal York Hotel in Toronto has been awarded to Anglin Norcross Ontario Ltd.

Announcing the award this week, R. A. Mackie, general manager of CPR Hotels, said that excavations for the new wing, which is to be built on the parking lot east of the hotel, will start in August and the east entrance will be closed. The work is scheduled for completion in 1958.

The new wing will bring capacity of the Royal York to 1,600 rooms, ensuring its fame as the largest hotel in the Commonwealth will be unchallenged for some time at least. It will be fully air-conditioned.

Apart from 11 new bedroom floors, the new wing will have a 15,200 sq. ft. banquet room capable of accommodating 1,700 diners or 3,000-strong meetings. Two other large meeting rooms are planned for the convention mezzanine floor and 12 private salons for meetings, meals or receptions.

When the new wing and other work is finished, the hotel will be able to house about 2,400 guests, serve meals to some 10,000 people at one sitting, and provide meeting rooms with a total seating capacity of over 15,000.

The Royal York extension is part of a $30 million hotel building splurge (F.P., Feb. 25) which is expected to increase Toronto's hotel accommodation by about 50% within the next two years.

University of Alberta Has $1 Million Expansion Plans

Two major additions to the University of Alberta in Edmonton, at an estimated cost of about $1 million, are expected to be ready for use next year.

—Work has started on a four-story administration building which is scheduled for completion next summer.

—Construction of a $350,000 biological science wing will begin this summer and is also expected to be ready for next year.

Poole Construction Ltd. has been awarded the general building contract at $565,000 for the administration block which will also house the student and advisory service, national employment service quarters and six lecture rooms. It will go up on the southwest section of the campus.

Lockerbie & Hole are heating, plumbing and ventilating contractors ($243,400) and Young Electric has the electrical contract of $88,500.

This year's operations grant of $2.2 million is 16% more than last year, and covers about 75% of tuition costs for the university's 4,100 students. Next term fee increases will average $7 per student, bringing them in line with other western Canadian universities and adding approximately $29,000 to university revenues.

The university also hopes to benefit from a recent amendment to the University of Alberta Foundation Act, allowing it to hold gifts totaling $1 million from the previous limit of $250,000. So far this year, two major grants for educational research have been received: $127,500 from the W. K. Kellogg Foundation and $50,000 from the Carnegie Corp., New York.

$4 Mill. Office Has Cross Design

A $4 million office building, 12 stories high and designed in the form of a cross, is planned for the southwest corner of Bloor and Jarvis St., Toronto.

It will be owned by a new corporation, Glenmore Holdings Ltd., and architects are Bregman & Hamann, Toronto.

Goodwin Bros., representing the owners, described the design as a radical departure from conventional office building.

In addition to the 12 stories, the building will have two underground floors for parking. It will contain 160,000 sq. ft. A full floor of 12,000 sq. ft., using the four projections of the cross, will be available for tenancy or a 2,200 sq. ft. to 3,900 sq. ft. wing for tenant requiring less space.

Gibson Bros. will be rental and management agents with W. H. Bosley & Co. as co-brokers.

The site which has a 127-ft. frontage on Bloor and a 180-ft. frontage on Jarvis St., was bought for $350,000.

B. Perini & Sons (Canada) Ltd. has been awarded the general contract and the building is scheduled for completion by December, 1957. It will have autotronic elevators and air-conditioning and be known as the Bancroft Building.

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$90,000 Mortgage Wanted By Baby Carriage Manufacturer
File NO-3010—Old established family owned company manufacturing baby carriages will pay 8% interest rate to borrow $90,000 for ten years (repayment guaranteed in Canadian dollars). Security — chattel first mortgage on plant and equipment having a replacement value of $213,000. Mortgage monies will be used to stock pile raw materials, improve company's working capital position, and finance general expansion to increase production. The firm is ably managed and is operating at a profit, approximately eighty people are employed in 30,000 square feet of factory area. Photo of plant, balance sheets, product catalogue and invitation to visit company will be forwarded on request.

$75,000 Mortgage Wanted By Television Cabinet Manufacturer
File NO-3011—One of Canada's largest privately owned television cabinet manufacturing companies will pay 9% interest rate to borrow $75,000 for five years (repayment guaranteed in Canadian dollars). Security—first mortgage on 40,000 square foot factory, building having a replacement value of $180,000. Mortgage money is required to purchase raw materials for large orders and provide expansion capital to diversify production by acquiring new lines of products. Management is extremely cost conscious and fully experienced. The firm employs eighty-four people making over a half million dollars of products annually. Photograph of plant, last ten year's balance sheets and invitation to visit factory will be forwarded on request.

$400,000 Mortgage Wanted By Company Building New Hotel
File NO-3012—Private company is planning to build a modern sixty-room hotel in a busy Ontario city where A-1 hotel accommodation is almost non-existent. When completed, it is estimated this hotel will be the finest of its kind within a fifty-mile area. To finance the cost of construction, the owners wish to borrow $400,000 for a twenty-year period, for which they will pay 9% interest rate (repayment guaranteed in Canadian dollars). Security — first mortgage on building with an estimated replacement value of $800,000. Forecast of earnings, sketch and plans of hotel will be forwarded on request.

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New Company's First Engine Will Fight Sask. Fires

The first fire engine to be completed by the recently-formed King Seagrave Ltd., Woodstock, Ont. has been delivered.

A combination pumper mounted on a General Motors chassis, it went to Yorkton, Sask. and is the first of several units now in course of delivery to municipalities. Firm orders have been obtained in sufficient quantity to ensure a successful start and prospects for further business are encouraging.

King Seagrave was organized by its president, V. B. King, who is also president of Truck Engineering Ltd., Timberland Machines Ltd., and Blair Metal Products Ltd., all located in Woodstock.

The new company plans to sell across Canada to industry, governments and municipalities. An agreement with Seagrave Corp., Ohio, manufacturers of fire apparatus, provides for the manufacture in Canada of fire pumpers, aerial ladder trucks and allied equipment using Seagrave chassis and other components. It also covers the franchise for Seagrave sales and service. A similar agreement has been made with Hole Pump Co., Penn., makers of fire pumps.

V. B. KING

King Seagrave fire engines have passed tests and been authorized by the Canadian Underwriters Association. They are now in full production. The new company also makes street flushers, road sanders and associated equipment.

Combined operations of associated King industries in Woodstock employ 300 persons.

Weather Speeds Regina Projects

From Our Own Correspondent

REGINA — The most important series of construction projects that has occurred in the area for some years is making good headway as a result of improved weather conditions.

Here is the progress report on the major contracts which represent an investment of about $13 millions:

Post Office — Involves contract work worth $3.2 millions. Interior work, scheduled for completion early in the new year, is now in hand.

Nursing Home — Located east of the legislative building, it will cost about $1.4 millions. Concrete work has been completed and brick work is well advanced.

RCMP Barracks — Footings are being poured for this $1.3 millions building and interior work is proceeding on the $500,000 mess cafeteria.

Cement Plant — Foundation contract, scheduled for completion this month at a cost of about $800,000, has been let for the Saskatchewan Cement Corp. plant which carries a total price ticket of around $4 millions.

Apartment Blocks—Steel work and interior and exterior brick work has been completed on the first of five apartment blocks for Graybar Holdings Ltd. Contract is for $1.25 millions. Starting date for erection of other four blocks has not been announced.

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Excellent prospects for advancement. Remuneration by salary. Expense allowance will be paid and a car provided. A Group Health Scheme is available. The successful applicant will receive two months' training on full salary.
Reply stating age, qualifications and salary expected to
Box 699, The Financial Post, Toronto

ADMINISTRATIVE ASSISTANT AND OFFICE MANAGER REQUIRED
Large progressive organization requires a young man in the TV field; with a college degree or equivalent to act as Administrative Assistant and Office Manager. Applicant must have Administrative experience and it is desirable that he be conversant with accounting matters. This position will prove interesting to anyone who has initiative and enjoys working with personnel. 5 day week, welfare plans, generous vacation with pay after one year's service. Salary range $5210-$6650.
Box 721, The Financial Post, Toronto

SALES ENGINEER
We have an opening in Montreal for a graduate engineer, or equivalent, in a Company whose products are well-established in the precast concrete field. This is an excellent opportunity for a man who wants to go places.
For this position we are looking for a man in his early thirties, but age is not a barrier. Sales experience in the construction industry an asset but not essential. Salary open to discussion. All applications will be kept in strictest confidence. All applicants will be interviewed in Montreal. Send particulars to:
BOX 711, THE FINANCIAL POST, TORONTO

EXECUTIVE ASSISTANT
$7500
Nationally known distributor of products in the Building and Industrial fields requires a young man in the 30-40 age group with proven executive ability. The duties of this position are of an administrative nature with the person reporting directly to the Vice-President. He will be responsible for co-ordinating company policy and standardizing procedures throughout the whole organization.
A suitable background for this position would be a University or C.A. degree with several years industrial training and experience.
This is a real growth opportunity with a starting salary in the area of $7500 per annum. Reply in complete confidence giving full particulars about yourself, your training and experience. All replies will be acknowledged.
BOX 734, THE FINANCIAL POST, TORONTO

CHARTERED ACCOUNTANT
Maritime subsidiary of national organization requires a young man who recently obtained the designation Chartered Accountant. Excellent opportunity for advancement for an ambitious person. Initial salary $4,000.00-$5,000.00 depending upon qualifications and experience. Apply in own handwriting giving particulars of qualifications, experience and references and enclosing snapshot. All replies will be held in confidence.
BOX 723, THE FINANCIAL POST, TORONTO

DISPLAY ADVERTISING RATES
$8.40 per col. inch per insertion, (60 cents per agate line, 14 lines constitute one inch). Closing date — Copy must be in Toronto Office by Tuesday a.m. Display advertising in this section payable in advance.

POSITION WANTED
Science graduate, chemistry and economics, overseas veteran, married, over 10 years varied business experience, accounting, purchasing, customs, statistics, some technical experience, in chemical, pulp and paper industries, proficient in typing, shorthand, desires position where varied academic and business background can be used.
Presently profitably employed in supervisory position but seeking work satisfaction through fuller use of varied capabilities. Prefer medium to large city location. Possess late model car. Will travel for interview.
Box 731, The Financial Post, Toronto

ADMINISTRATIVE EXPERIENCE AVAILABLE
Ten years experience managing small retail and manufacturing operation.
Responsible for: accounting and office procedure, production planning, cost control, personnel training.
Wide experience in: product design, merchandising and selling.
Able to make sound decisions with a minimum amount of direction.
Desires position in a progressive and expanding industry.
More interested in future opportunity than in immediate salary.
Box 728, The Financial Post, Toronto, Ont.

INDUSTRIAL RELATIONS
"Labor Roundup"—another Post exclusive—reports on the practical side of industrial relations week by week. Keep yourself in touch with the trend of union activity. Read The Financial Post.
Yearly by mail in Canada $8; elsewhere $7 yearly.

EDITORIAL ASSISTANT
Required by Law Publishers located in North West Toronto. Excellent prospects. Pension and Insurance Plans.
Box 726,
The Financial Post, Toronto

ASSISTANT ACCOUNTANT
A firm of consulting engineers requires an assistant accountant to supervise its accounting department. Applicants C.A., C.P.A., or B.Comm., are preferred and should have some knowledge of and be experienced in engineering and construction accounting.
Duties will include the active supervision of payrolls, time distribution, payables, receivables, billings, general ledger entries, depreciation, prepaids, accruals, etc., and the preparation of balance sheets and statements of profit and loss.
Replies should be in the applicant's own handwriting, stating education, experience and age. Reply to
BOX 727, THE FINANCIAL POST, TORONTO

UNUSUAL OPPORTUNITY
The position of assistant to a senior financial executive of a very large Canadian corporation offers an outstanding opportunity to a qualified accountant under 40 years of age.
Academic achievements should be honours degree in commerce and prize winning level in Chartered Accountancy. The ability indicated by this scholastic attainment should have been further developed by heavy experience in public auditing and broad training in industrial accounting gained in a substantial company with a reputation for the excellence of its accounting procedures.
Administrative skills and a mature and balanced personality are additional necessary attributes. Direct experience in methods improvement and a keen interest in this area are desirable in the planned activity of the position.
The initial duties of the position are assignments of vital importance to projects under way or contemplated in this large industrial organization. Under the aegis of the senior financial executive unique training opportunities will be afforded and successful performance in the position will lead to promotion possibilities which could be duplicated in only a very few companies.
The salary is appropriate to the requirement of the position and should prove attractive to candidates having the qualifications described herein.
Candidates are requested to give full particulars of both education and experience. All applications will be received in confidence and promptly acknowledged. Replies should be addressed to:
Box 706, The Financial Post, Toronto.

FINANCIAL EXECUTIVE
A Corporation operating on a national scale and continuing to expand requires a senior financial executive at its Head Office in Ottawa.
The man being sought should be under 50, preferably a chartered accountant, and presently holding a position as Controller, Assistant Controller or equivalent. At management level he will deal with the financial, budgetary and accounting operations of a large organization with offices across Canada. He must be experienced in the application of budgetary and cost control and in financial forecasting.
The position offers a striking challenge to the man with the required accounting, financial and organizational background and the necessary qualities of leadership and personality.
The salary to be paid for this position will be commensurate with the experience and ability of the successful candidate.
Reply to Financial Executive
Box 524, Montreal, Quebec

CAREER OPPORTUNITIES
IN MODERNIZATION OF OFFICE OPERATIONS
A major Canadian financial institution is expanding its Methods and Machine Accounting Departments, looking to the advent of integrated and electronic data processing. We seek three young men (vicinity of 25 to 35) with a record of progressive responsible experience, capable of further growth. The positions:
1. **A Machine Accounting Systems Planner (IBM).**
2. **General Systems and Procedures Analyst, for work simplification, work measurement, and I.D.P., E.D.P. feasibility studies.**
3. **Head of Forms Analysis and Design Unit.**

These positions are senior in status and salary. Candidates must be capable of doing creative work under minimum supervision and should have a genuine appreciation of the contribution good staff work can make to raising the productivity and profitability of line operations.
You are invited to submit a resume in letter form to Box 730, The Financial Post, Toronto, covering essential personal, educational, and occupational information, indicating which one of the above mentioned positions is most attractive to you. All enquiries will be treated in strict confidence.

Here's Our Power Industry Of Future

- *Atomic power won't make hydro obsolete.*
- *Canada will need more generating stations in the next decade than ever before in history.*
- *But the electrical industry must meet the future with careful planning.*

That's the report of J. A. Page, president of Southern Canada Power Co. and retiring president of the Canadian Electrical Association. He addressed 650 delegates at the CEA's 66th annual convention at Murray Bay, Que., this week. This is a digest:

By J. A. PAGE

Canadians second-largest per capita consumers of electricity in the world, last year used more power than ever before.

So great was the increase that most power company planners have been forced back to their calculators to revise upward their forecasts of future demand.

The second annual electric power survey of capability and load, published by the Dominion Bureau of Statistics in co-operation with the Canadian Electrical Association indicates that the power-producing utilities in Canada had a net generating capability in 1955 of 13,905,000 kw. which is an increase of 41% since 1951. The estimated percentage change from 1955 to 1959 is 39% and from 1951 to 1959, 96%.

The firm energy requirements in 1955 were 72,633 million of kwhr. which, it is forecast, will reach 101,508 million kwhr. by 1959—an increase of nearly 40%.

Current planning of new power projects still largely centres on hydro-electric development.

Plans of the utilities this year call for a stepped-up pace of construction of new facilities and maintenance of existing plants. Central electric stations that supply vital electricity are expected to spend some $634 million on capital growth this year, well up from about $450 million in 1955, and $455 million in 1954. The 1956 total consists of $580 million capital plant and $55 million repair.

It is interesting to note that, despite the phenomenal growth of the industry to date, should the present rate of growth continue, the industry will construct more new generating plants in the next 10 years than it has in the entire history.

The demand for power in some parts of Canada is such that it indicates a double in less than eight years.

Power production in 1955 rose from 69,135 to 76,201 million kwhr., an increase of 10%.

The solid base, for Canada's competitive position in the world, will always buy hydro-electric power. The nuclear scientist and engineer expect no "breakthrough" of nuclear science that will make obsolete any efficient water-power development.

Role of Atomic Energy

Still the big question mark on the power-development scene is the role that atomic energy will play. With the growing importance of thermal sources for future power development, atomic-power stations could play a significant part . . . if power-production costs from this source are competitive with power production based on other fuels. The offsetting factor is, of course, that atomic-power plants can be located close to the market for their electricity.

In total, about 4,300,000 customers are now receiving electric service as compared to 1,940,000 in 1939. Of the estimated 630,000 occupied farm dwellings in Canada, about 70% were receiving electric service in 1955.

Some 92% of Canadian households are receiving electric service. The average annual consumption per residential customer during 1954 was about 3,270 kwhr. as compared to 1,423 kwhr. in 1939.

At the rate of purchase of electrical home appliances in recent years, it is obvious that Canadian homes are not adequately wired to take advantage of these labor-saving devices let alone take care of the new ones appearing on the market each month.

There is a tremendous job to be done here. In the past, the manufacturers spent a tidy sum each year for the promotion of adequate wiring and utilities have done a great deal at the local level to put the story across. However the wiring contractors were, for the most part, satisfied to take orders for whatever was asked although they knew the installations would hardly meet the present-day requirements, let alone take care of future needs.

The Electrical Leagues across the country have been very active and have met better co-operation on the part of contractors' associations.

Future Planning

Important to our industry as a whole is the foresight and planning for future needs in every branch of our business. It is the duty of each branch to make such plans for the future within the limits of their scope, and the duty of this association to correlate them whenever this is possible.

It should be an integrated effort to get the energy from our generating units to the customers' utilization equipment where it can increase our production per man, reduce costs, contribute to our comfort and better our way of living.

To achieve this goal, our planning has to start with the right personnel, men aware of the increasing pace of our growth with belief in the future of our business and with sound economic sense. These men have to plan so that no material part of our systems should have to be replaced by something that should have been there in the first building and that no false starts are made that may become obsolete all too soon.

Manpower, material and other costs in our business are increasing steadily and to hold them in balance, we must find ways and means to increase productivity per manhour of labor by new methods or mechanical aids, use our material to its safe maximum and carefully scrutinize our "other costs" with intent to reduce them to the absolute minimum.

As B. L. England, president of the Atlantic City Electric Co., said in regard to the necessity of supplying reliable service: "Transportation, water supply, communications, fire protection, sewage treatment and disposal, refrigeration and food preservation, in other words the very life and safety of America, today depends upon a constant and uninterrupted flow of electricity."

Snow, sleet and wind are our enemies in this country besides trees, small boys with rifles and kites and not the least is what Pat England calls the pole oriented truck or automobile.

We all agree that essential services should be given priority in cases of power failures or shortages especially in centres of high population density. On the other hand, there are economic limits to providing such a service, and in many instances, emergency stand-by units should be provided by the users themselves, such as emergency lighting in hospital operating rooms, and I think the wise dairy farmer who has a herd of cows, who have never been milked by hand, should provide himself with a 3-kw generator to take care of power failures.

The rate of return in the utility industry should be maintained at a high enough level to attract new capital for plant expansion in competition with all other types of industry. Because of the very large investment in plant, relative to gross revenue and net profit, we must study carefully the effects of dollar devaluation.

For example, the present-day cost of replacing plant constructed in 1913, is approximately four times greater than the 1913 cost, but the annual provisions for depreciation, being based on original cost, will provide only about 25% of the money needed for the replacement. Some of the balance of funds will come from retained earnings, but most of it will be obtained from new capital. This new capital will not provide additional plant, rather it will provide for replacement of a large part of the old plant.

Regulatory bodies that have been set up to control rates must recognize that we have to compete with other industries for the investor's dollar.

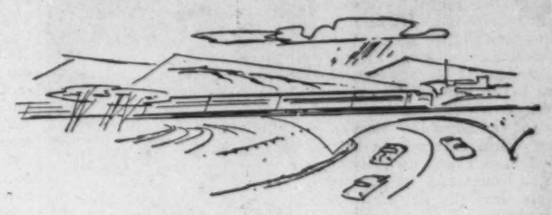
Because of the growing demands for engineers and technicians in nuclear energy development, electronics, automation etc., which all carry an aura of glamour quite attractive to the younger generation, we should direct some effort in selling the idea that the utility field has many things to offer besides security of income. There is a constant challenge to ingenuity, initiative and enterprise and the scope of the work is getting broader every day.

Electric Power Output

MILLION KWH

	1954	1955	% Change
Quebec	34,732	35,845	+3
Ontario	20,964	25,336	+21
British Columbia	5,371	6,052	+12.8
Manitoba	3,008	3,100	+3.0
Alberta	1,485	1,706	+15
Saskatchewan	1,288	1,416	+10
Nova Scotia	1,130	1,196	+6
New Brunswick	887	843	—5
Newfoundland	238	661	+178
Prince Edward Island	33	46	+39
TOTAL	69,135	76,201	

Remember how you felt the first time you set foot aboard a CNR train . . . the sense of security and well-being — the excitement of going somewhere fast?



A THRILL TO RECAPTURE — Why not, soon, give your youngsters a chance to savor the same delicious thrill of a first time trip?

TRAVEL IS EDUCATION — Through the huge picture windows the glories of the countryside come vividly alive. Rivers your youngster read about, wind lazily by, and a town that was only a vague name comes alive. When you travel by CNR with your family, *you're* on a holiday too, completely relaxed, no sense of strain.

ON CNR, YOU'VE NEVER HAD IT SO GOOD — A between-meals bite? You'll be delighted when you try CNR's dining facilities . . . anything from a snack to a full course meal. Stretch your legs? You can "go for a walk" for half a mile as the train speeds along. On this highway there's no need to worry about where you're stopping for the next washroom, or where you're going to eat — everything for your family's convenience travels right along with you. And, if you wish, a rented car will await your arrival at major points.

It's fun to travel CNR — that's why every week more and more Canadians go CNR on such famous "name" trains as the Super Continental, the Continental, the Ocean Limited.

CANADIAN NATIONAL RAILWAYS

Contact your Canadian National representative for information and reservations.

R298

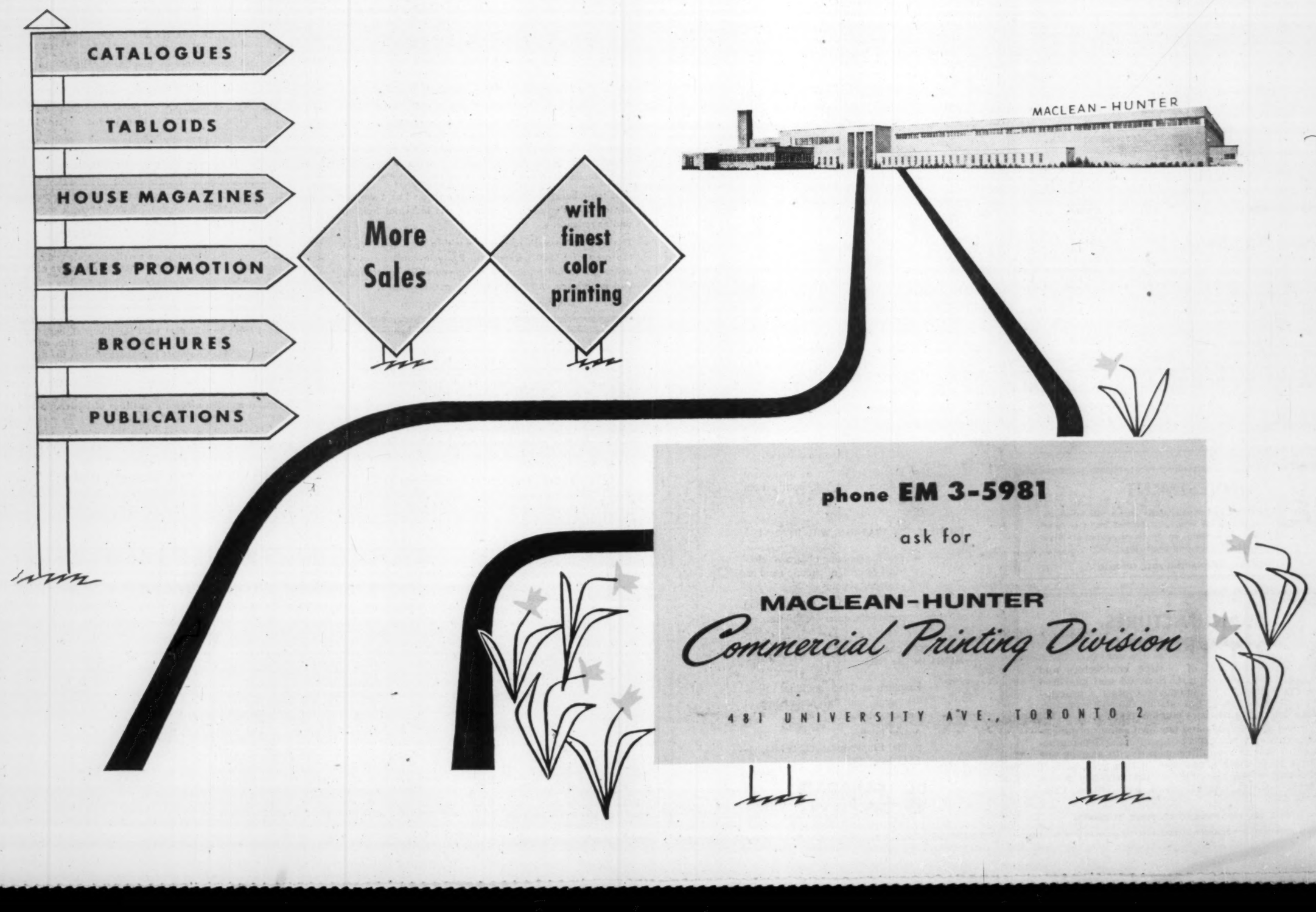
J. T. Scarlett Heads Hamilton Controllers

John T. Scarlett, sec'y-treas., Cosmos Imperial Mills Ltd., has been elected president Hamilton Control of the Controllers' Institute of America. John Plumpton, National Steel Car Corp., is new vice-pres. Other newly elected officers and directors are:

Secretary: N. J. Brown, comptroller, Steel Co. of Canada.

Treasurer: H. S. Wigley, Packard Electric Co.

Directors: E. G. Howe, Hamilton Cotton Co.; J. C. MacMicking, Thompson Products Ltd.; G. Moller, Robertson Irwin Ltd.; W. K. Nelson, Joy Manufacturing Co.; J. G. Sheppard, Dominion Foundries and Steel Ltd.



ANNOUNCEMENT

UNION ACCEPTANCE APPOINTMENT

ALEX R. GAY

Mr. Frank E. Burroughes, President, Union Acceptance Corporation Limited, is pleased to announce the appointment of Mr. Alex R. Gay to an executive position in the Head Office of the Corporation. Mr. Gay has been associated with the sales finance industry for many years and consequently brings a broad knowledge of the business to U.A.C.

ANNOUNCING

important appointments in Canadian Industry, Finance, Business and Government.

Ajax Corp. (Niagara Falls, N.Y.) — control recently purchased by Montgary Explorations Ltd., Toronto, which also controls Surpass Petrochemicals Ltd. of Toronto. James E. Shield, president Surpass Petrochemicals, to be president Ajax Corp.

Associated Screen News Ltd. (Montreal) — Norman Hull, formerly Quebec district manager to be general sales manager; Jack Mackay, formerly of Quebec sales force, to be Ontario district manager, headquarters Toronto; "Nick" Nicholson, formerly in charge laboratory sales and service to be Quebec district sales manager; Armand Lefebvre, service manager, laboratory division.

Auto Specialties Mfg. Co. (Canada) (Windsor) — R. M. "Bert" Foote, general manager.

Bank of Nova Scotia (Halifax)—C. Sydney Frost, executive vice-president, to be president, succeeding H. L. Enman, who retired but continues as chairman.

Wallace Barnes Co. (Hamilton) — R. M. Buchanan, general manager.

Beatty Bros. Ltd. (Fergus, Ont.) — J. M. Gifford, assistant to the production manager; P. M. Macdonald in charge contract section and Hoffman Machinery Co. production, to be general manager Spencer Division, Penetang.

Bouzan Mines Ltd. (Toronto) — N. C. Urquhart, H. L. Roscoe, R. V. Porritt, directors, representing Noranda Mines Ltd.

British-American Oil Co. (Toronto) —E. D. Loughney, formerly vice-pres., Canadian Gulf Oil Co., director and vice-pres., headquarters, Toronto, responsible for executive direction and control of B.A.'s expanded exploration, production and pipe line activities in Canada following acquisition of Canadian Gulf; O. I. Torkelsen vice-pres. and general manager enlarged exploration production and pipe line operations in Western Canada, including those formerly conducted by Canadian Gulf, headquarters Calgary.

Building Materials Display Centre Ltd. (Toronto) — William F. Hyslop, assistant director, public relations and promotions.

Canadian Association of Actuaries — N. D. Campbell, Crown Life president; J. B. Waker, Canada Life, secretary; M. E. Comfort, London Life, treasurer; W. H. Aitken, Empire Life, W. J. Cohagen, Prudential of America, L. E. Coward, W. M. Mercer Ltd., executive committee.

Canadian Automotive Trim, Ltd. (Windsor, Ont.) — Philip E. Church, formerly vice-president operations, to be president; John G. Bannister, president of parent company, National Automotive Fibres Inc., chairman.

Canadian Ice Machine Co. (Toronto) — O. L. Davie, Ottawa branch manager.

Canadian National Railways (Montreal) — Henry J. Betts, electrical engineer in motive power and car equipment department, to be chief electrical engineer, succeeding Harold F. Finnemore retired.

Canadian Pacific Airlines Ltd. (Vancouver) — J. C. Gilmer, comptroller.

Canadian Westinghouse Co. (Hamilton) — Edward R. Nary, manager headquarters manufacturing department, A. A. Peters sales manager electronic tube division.

W. Clark Ltd. (Montreal) — Allan E. Crawford, manager research and development; Donald S. Bartlett, manager, Harrow, Ont., plant.

Creative Display Advertising Ltd. (Toronto) — Gerrard Fattori, a director.

Crown Cork & Seal Co. (Toronto) —H. G. S. Bain, president, headquarters Toronto.

Crown Trust Co. (Toronto) — Ivan R. Startup, trust consultant.

Doherty Roadhouse & Co. (Toronto) — D. G. Bannerman, J. Colquhoun, C. B. Dixon, W. H. Jacobs, admitted as general partners.

Dominion Board of Insurance Underwriters (Montreal) — Charles Curtis, Employers' Liability Assurance Corp., president; Alex S. Hamilton, Scottish Union and National Insurance Co., 1st vice-president; C. G. Angas, Yorkshire Insurance Co., 2nd vice-pres.

Dominion Glass Co. (Montreal) — T. B. King, assistant secretary to be secretary; A. G. Price, assistant comptroller.

Gair Co. Canada (Toronto) — A. L. Mitchell to be sales consultant to the president, continues as vice-president; W. W. Cherry, general sales manager of corrugated shipping container divisions; C. W. Tomlinson, general sales manager of folding carton divisions; F. A. Barnes, general sales manager, paper specialty divisions.

Gardiner, Watson Ltd. (Toronto) — O. R. Edmonds joins company.

Garland-Blodgett Ltd. (Toronto) — Russell A. Prowse, president in charge of operations, continues as general manager.

Hayes Steel Products Ltd. (Merritton, Ont.) — J. E. Martin, president of Dana Corp., Toledo, Ohio, to be president and chief executive officer succeeding J. W. Primeau who resigned as president and general manager but continues as director; V. Kaufman, vice-pres. operations to be vice-pres. and general manager.

Imperial Life Assurance Co. (Toronto) — F. V. C. Hewett, president and managing director, McIntyre Porcupine Mines Ltd. etc., a director.

Kingsway Transports Ltd. (Montreal) — W. Gordon Black, treasurer; James D. Fleming, chief accountant.

Maclean-Hunter Publishing Co. (Toronto) — J. L. Craig and Edward Nymark, directors.

Maple Leaf Gardens Ltd. (Toronto) — C. Stafford Smythe, vice-pres. of C. Smythe Ltd., a director.

O. A. Matthews & Associates Ltd., (Toronto)—Overton A. Matthews, George L. Stewart, James W. Thain, Lewis R. Ord, and Frank A. Matthews, directors.

National Research Council of Canada (Ottawa) — Dr. Leslie E. Howlett, director Division of Applied Physics, named president, Advisory Committee for Definition of the Metre.

National Steel Car Corp. (Hamilton, Ont.) — F. H. Sherman, director and executive vice-pres. Dominion Foundries and Steel Ltd., a director.

Nuodex Products of Canada Ltd. (Leaside, Ont.) — Lawrence W. Samler, plant superintendent.

O'Keefe's Brewing Co. (Toronto) — T. E. Arkell, president, succeeding M. J. Kelly, who becomes chairman.

Philco Corp. of Canada (Toronto) — M. L. Harding, controller.

P. R. and Business Communications Ltd. (Toronto) — Cyril Bassett, president; Milton Cronenberg, vice-president.

Oscar C. Rixson Company's Canadian subsidiary (Toronto) — Bob Maybee, vice-president and general manager; company will set up Canadian plant operations and general offices at Toronto.

Rolph-Clark-Stone-Benallack Ltd. (Montreal) — James M. O'Reilly, controller, retaining present duties as secretary and treasurer; Struan R. Robertson, director; G. M. Stockless, sales manager.

Royal Trust Co. (Montreal) — John A. Boyd, vice-president and director Canadian Marconi Co. etc., member Toronto advisory board.

STEPHEN W. THOMPSON

assistant manager, Credit Bureau of Hamilton, has been elected president, Advertising & Sales Club of Hamilton.

J. A. deBONDY

vice-president, Welland Electric Steel Foundry Ltd., Welland, Ont., has been elected a director.

Royalite Oil Co. (Calgary)—George C. Grainger, district landman, in charge company's land office at Regina.

F. C. Russell Co. of Canada (Toronto) — Harold P. Smyth, president, succeeding F. C. Russell, who continues as chairman; W. A. Dean, vice-president; A. L. McAuley, treasurer.

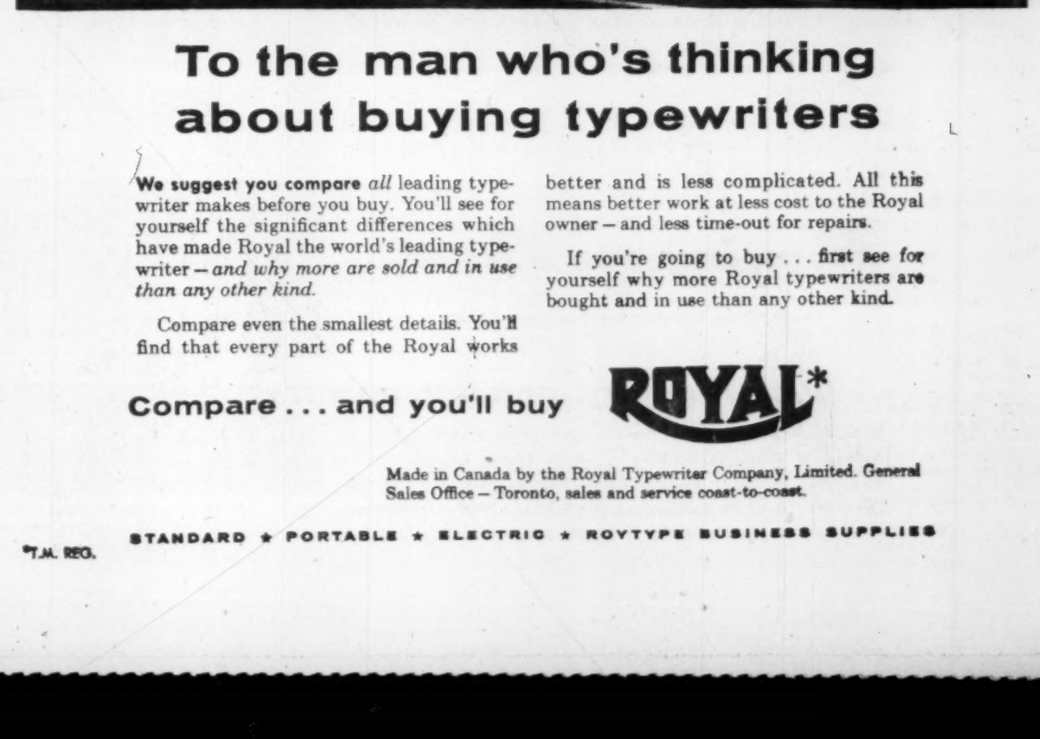
Savage Shoes Ltd. (Preston, Ont.)— J. S. Malcolm, a vice-president; A. G. McNiece, sales manager.

Horace N. Stovin & Co. (Toronto) radio and television station representatives — W. D. (Bill) Byles, executive vice-pres. and director.

Supertest Petroleum Ltd. (London, Ont.) — J. Gordon Thompson president prior to 1950, re-elected to fill vacancy created by retirement of W. L. Barager.

Thompson Products Ltd. (St. Catharines, Ont.) — G. A. White, manager, mining products division.

Union Acceptance Corp. (Toronto) — A. R. Gay to executive position at head office.



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For All Diesel, Steam and Electrical Power Requirements

296 Richmond St., W.
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Represented in:
Vancouver, B.C. Montreal, Quebec

J. E. SUTHERLAND

factory accountant, Canadian Westinghouse Co., has been elected president, Hamilton Chapter, National Office Management Association.

ALLIANCE MANAGEMENT ASSOCIATES LIMITED

Industrial and Management Consultants

Takes pleasure in announcing the opening of their office in Montreal at:

1005 Transportation Bldg., 132 St. James St. West

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To provide a broad service to commercial and industrial enterprises in all phases of modern management techniques, plant layout, materials handling, commerce, finance, labour relations, personnel counselling, executive placement, etc.

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Business Administrative Advisor—R. P. I. Morton.

BANKERS — The Mercantile Bank of Canada.

SOLICITORS — Hagessen, Macklaier, Chisholm, Smith and Davis.

Firestone expands in Montreal...

New Building ENGINEERED and CONSTRUCTED by COMMERCIAL LEASEHOLDS (QUEBEC) Limited

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Buildings for Sale or Lease

This new sales office and warehousing building, 65,000 sq. ft. in area, is the latest step in the expansion program by Firestone Tire & Rubber Company of Canada Ltd. in the Montreal district. It is another project completed by Commercial Leaseholds (Quebec) Limited, for this leading Canadian rubber company.

A unique service to the concern planning a building or expansion program is offered by Commercial Leaseholds. One contract provides one control on all details. From original sketches to finished plant, ready for occupancy, responsibility rests with this team of professional engineering specialists. Progress is unhindered and costs are governed. Financial arrangements can be made on a sale or lease basis for the completed structure.

We will be pleased to consult with you on your present needs or future plans, without obligation, of course.

We invite you to appraise the experience and accomplishments of this engineering organization. Write today for further information.

COMMERCIAL LEASEHOLDS (QUEBEC) Limited
Post Office Box 63, Postal Station Snowdon
Montreal 29, Quebec

In Ontario address inquiries to

COMMERCIAL LEASEHOLDS COMPANY LIMITED
Head Office, Hamilton, Canada

To the man who's thinking about buying typewriters

We suggest you compare *all* leading typewriter makes before you buy. You'll see for yourself the significant differences which have made Royal the world's leading typewriter — *and why more are sold and in use than any other kind.*

Compare even the smallest details. You'll find that every part of the Royal works better and is less complicated. All this means better work at less cost to the Royal owner — and less time-out for repairs.

If you're going to buy ... first see for yourself why more Royal typewriters are bought and in use than any other kind.

Compare ... and you'll buy ROYAL*

Made in Canada by the Royal Typewriter Company, Limited. General Sales Office — Toronto, sales and service coast-to-coast.

*T.M. REG. STANDARD ★ PORTABLE ★ ELECTRIC ★ ROYTYPE BUSINESS SUPPLIES

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544 Howe St. Vancouver

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Imitation Anything

Rubber - like composition which "permits a faithful duplication of any material (natural or man-made)" is now available in Canada. Color, texture, depth character are reproduced by making the mould from the actual item. Brick walls, weathered wood planking, wood shingles, tree stumps, rocks, leaf borders, hedges, wood doors with wrought iron hinges, sculptured ornamental scrolls and statues are among the many objects that may be simulated in the new material. Manufacturers claim that a few inches away each one looks like the original. The unbreakable material is light in weight and easily moveable. Ideal for all types of display.

* * *

Cool Slumber

A new foamed latex mattress has ventilator openings molded right into the sleeping surface to assure maximum fresh air circulation throughout the entire mattress. Stays at room temperature. Each cell is a true sphere and provides excellent supporting arch. Varying weights are accommodated independently at various parts of the mattress surface to give posture support and a lightweight sleeper does not roll toward a heavy one. The 90% air mattress is light, comfortable and long wearing.

* * *

Spare is Superfluous

New auto tire has two air chambers, each inflated by a separate valve. If the outer chamber is punctured, the car can ride on the tire for 100 miles or more, thus eliminating the need to carry a spare.

* * *

Squelches Chalk Squeak

Schoolroom green "blackboard" consists of a sheet of plastic and glass fibre with a silent surface. Eliminates agonizing squeal of chalk, reduces glare and makes for easier reading, it's said. Also available in a variety of colors to take crayons and water colors. Easily and inexpensively installed.

* * *

Ice Hat

There's a head cooler for use in hot weather that acts for hours. Consists of a hat of foam-like plastic fabric with millions of tiny insulating spongelike cells. Hat is dipped in ice water, wrung out and worn. Cooling effect comes from moisture in the material evaporating slowly. Headpiece is crushproof and washable.

* * *

Bandage Won't Budge

New gauze bandage doesn't slip, conforms to the contour of the body, bands without binding and allows movement of the covered part, claims the manufacturer. Soft pliable material stretches 40% under pressure and reverts to the original shape without losing elasticity.

* * *

Compact Color TV

Twenty-one inch color TV receiver provides a full 260-square-inch picture and features a cabinet 41 inches high, 23⅞ inches deep and 27½ inches wide (two inches less in height, depth and width than any other color set now on the market, claim the manufacturers). Front control panel is removable to provide quick access to controls for adjustment of picture clarity.

* * *

Weather Sentry

Outdoor thermostat warns indoor thermostat of changing temperature conditions. Expected to cost about 75% less than existing automatic systems. Control helps prevent indoor temperatures from dipping with sudden outside changes, and eliminates the necessity of house owner adjusting indoor thermostat to compensate for heat loss through colder walls. Electrical signal sent from outside to inside control via a 25-volt circuit.

* * *

Counts, Lives on Shakes

New vibrometer, electrical instrument for measuring mechanical vibration, is completely self-contained, needs no batteries or electrical connections, but utilizes the energy of the vibrating body. Gives direct readings of the amplitude of vibration in thousandths of an inch and is exceptionally accurate, it's said, even at low amplitudes and frequencies.

* * *

Run Retarder

Nylon saver reduces snags, runs, tears and makes stockings last from three to five times longer, it is said. Forms a film that cannot be seen or felt but which strengthens the threads. Sharp, rough objects glide over the smooth-coated hose. Takes less than three seconds to treat one pair and a four ounce tube of the material contains enough for 100 pairs.

* * *

Rugged Fender Bib

For service stations and auto repair shops there's a new "completely acid-resistant" fender cover of single-weave, napped construction, designed to cover the entire fender. Tools and parts can rest on it without sliding off and it polishes the fender while in use. May be used indefinitely.

* * *

How Good's Your Bridge?

Bridge players can compare their bidding and playing with those of experts. Special bridge set includes two specially designed decks of cards with a series of individual perforations and cutouts across the top and bottom of each card. Players select their cards according to instruction, then bid, lead and play as in any bridge game. The post-mortem after the game consists of comparing scores with those of experts (contained in a special book of instructions).

* * *

Air Conditioner

New line of complete central-station, cabinet-type air conditioning units for industrial and commercial applications feature compactness, simple installation, design flexibility and a wide capacity range in all types from 600 to 48,000 cu. ft. per minute. There are three types: air conditioning units, sprayed coil conditioner units and multi-zone conditioner units. All have large volume, slow speed, air circulating fans. Cooling and dehumidifying can be done with chilled water, direct expanded refrigerant or brines. Heating is done with steam or hot water. Cleanable or throw-away filters are used for air filtering. Target-type water nozzles or sprayed coils may be used for humidification and manual or automatic controls can be provided for temperature, multi-zone or ventilation control.

* * *

New Catalogues

B. F. Goodrich, Kitchener, Ont. has published the 1956 dealer edition of the B. F. Goodrich Red Book—a catalogue of automotive rubber parts and accessories and related products which has been published annually since 1935.

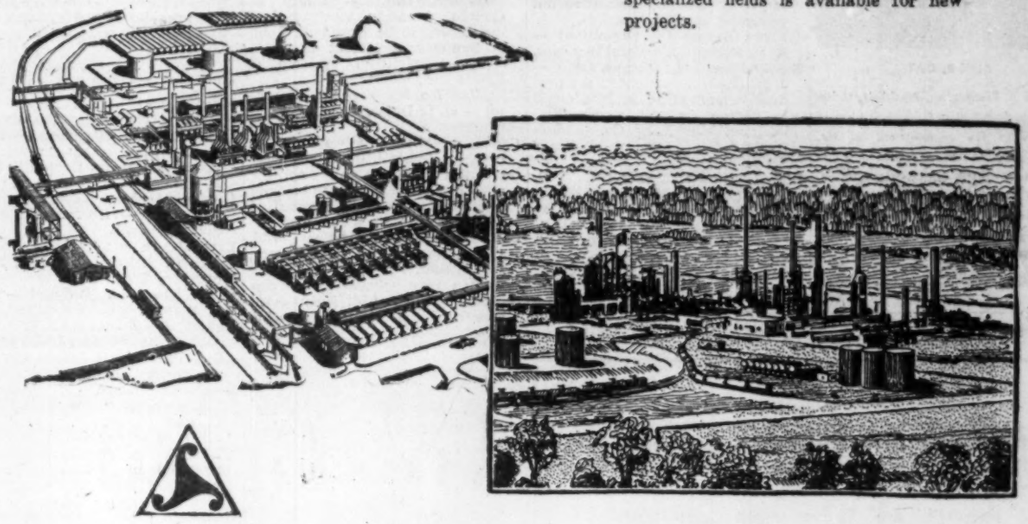
Development Studies *and* Reports

FOR THE NATURAL GAS, PETROLEUM, PETROCHEMICAL AND CHEMICAL INDUSTRIES

Stone & Webster has designed and constructed many plants for the process industries to produce intermediate and finished products.

Much of this work resulted from development studies and reports made by the organization, which included consideration of markets, plant location, raw material supply, processing methods, handling facilities, utilities, transportation and other factors.

Stone & Webster's broad experience in the preparation of development and economic studies and reports in these specialized fields is available for new projects.



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Coal, Labor Requests FPC Drop Gas Suit

National Coal Association in U. S. has asked the Federal Power Commission to dismiss applications to import Canadian natural gas and export U. S. natural gas to Canada.

The coal industry contended that neither Tennessee Gas Transmission Co., nor Midwestern Gas Transmission companies had fulfilled the requirements of the Natural Gas Act, and that both companies had failed to show that the project will be required by the present or future public convenience and necessity.

The coal industry said that Tennessee, among other things, is relying on reserves of gas which are not under contract to it and, hence, not legally available to Tennessee to deliver to Trans-Canada.

Of Midwestern's application, the coal industry said:

"No showing was made that Trans-Canada has the necessary permits from the Government of Canada authorizing it either to export or import gas.

"It has failed to establish the economic feasibility of its project.

"Its markets estimates and revenues are over-estimated and its costs are understated.

Can Gas Be Sold?

"It is dependent upon the sale of large volumes of both firm and interruptible gas to industries, but has not shown that such gas can, in fact, be sold.

"The pipeline as designed is inadequate to render the service proposed and, as a consequence, most, if not all, of its markets north and west of Eau Claire, Wisc., would be entirely dependent upon Canadian gas.

"No showing has been made that the Midwestern project can be financed.

"It is a well-known fact generally, and the record herein bears it out, that the only reason Canada is permitting natural gas to be exported to the U. S. is because the all-Canadian pipeline is not economically feasible as a private enterprise otherwise.

"American coal miners, coal operators, railroads and railroad employees are being forced to subsidize an all-Canadian pipeline which, in turn, would be utilized to displace substantially more coal in eastern Canada. The public interest of the U. S. would clearly not be served by projects such as these."

The NCA has asked FPC to refuse to reconvene the hearings on the applications, and certainly not before Nov. 5, 1956.

Joining NCA in the legal step were the United Mine Workers of America, Fuels Research Council, Inc., Anthracite Institute, Western States Fuel Policy Council, Maher Coal Bureau and Chesapeake & Ohio Railway Co.

Hometown Shopping Spree

Shopping has as irresistible a fascination for the distaff side in Hometown Ontario as it does in the metropolitan centres. Today the hometown housewife has money to spend, and she's spending it, not in a twice-a-year shopping expedition to the Big City, but every week in the modern shops along Main Street. Here she can buy the same merchandise, the same quality and the same styles that she'd find in Toronto, Ottawa or Windsor.

Stimulator and guide on all her shopping trips is the Hometown Ontario daily. Its growing retail lineage tells her what's new in the shops. Over the years, home features and national advertising in the local paper have closed the gap in taste and demand between the big centres and the smaller cities. Naturally, today, the hometown housewife looks to the hometown paper to keep her informed of the newest products and the latest trends in modern living.

This is just one reason why Ontario's 27 local daily newspapers are the best read, most discussed, most influential reading that goes into the homes in the "billion-dollar-plus" provincial market. But it's another good reason why your sales message should have a showing in this hard-working advertising medium. Ask your advertising agency about putting the Hometown Ontario dailies on your next advertising schedule.

During 1955 local retailers purchased far in excess of 100,000,000 lines of advertising in "Hometown Ontario" daily newspapers.

All Business is Local

HOMETOWN ONTARIO

That vast market outside Ontario's Metropolitan Areas — sold effectively only by 27 Local Daily Newspapers.

ONTARIO PROVINCIAL DAILIES ASSOCIATION

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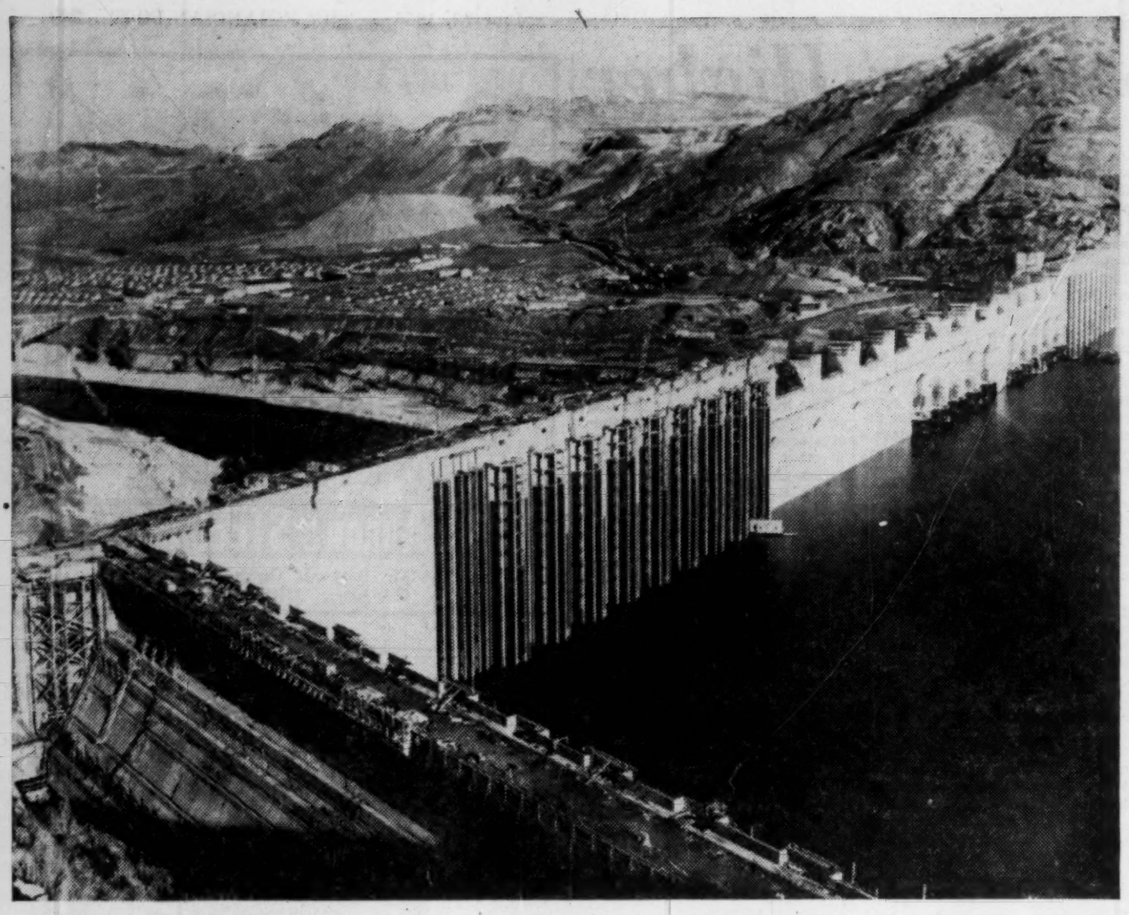
The Financial Post

Vol. L | Publication Office: Toronto, June 23, 1956 | No. 25



GRAND COULEE DAM in Washington state, the largest in the world, won't hold the record long, because . . .

B.C. Plans To Build World's Biggest Dam

From Our Own Correspondent

VANCOUVER—One of the greatest engineering projects in Canadian history, which will supply 1.5 million hp to power-hungry British Columbia, and costing an estimated $250 million, is scheduled for construction on the Columbia River.

The mammoth project was announced this week by A. E. "Dal" Grauer, president of the British Columbia Power Corp., which is the parent body of the huge British Columbia Electric Co.

The 700-ft. high rock and concrete colossus will be built on the Columbia a few miles south of where it makes the Great Bend. Its location is 140 miles north of Revelstoke.

It will take 10 years to build.

Mr. Grauer said final permission for the company to build the dam will have to await a conference starting July 4 in Victoria between Premier W. A. C. Bennett and Jean Lesage, federal minister of resources and northern affairs.

No Opposition

"But we have told both governments of our plans and neither has expressed opposition to it," Mr. Grauer commented.

"The actual application for permission won't be made until a certain amount of preliminary work is done," he added.

BCE vice-president in charge of engineering Thomas Ingledow said the company eventually plans to build five dams on the upper Columbia.

"The Mica Creek dam is the key to the whole system and we must build it first," he said.

"The dam should be capable of developing 1.5 million horsepower."

Biggest dam in the world at present is at Grand Coulee, downstream on the Columbia in Washington state.

Grand Coulee is 550-ft. high and develops 945,000 hp.

BCE plans to build the world's longest transmission line to bring Mica Creek power 400 miles to the lower mainland. Mr. Ingledew estimates the power line will cost $150,000 per mile or approximately $60 million.

Line Losses Less

The line will be constructed using a double-conductor system which reduces line losses at high voltage.

The system was pioneered in Sweden and has already been adopted for its 340,000-volt line from Wahleach to Vancouver.

Mr. Ingledew said the route has not yet been surveyed for the line. It will operate at 500,000 volts, highest in the world.

Construction of the dam will employ thousands of men over the 10-year period.

Mr. Grauer said engineering surveys and working plans for the dam will begin immediately and the job is expected to take about two to three years. Another five to seven years will be required to rush the dam to completion.

By that time, Mr. Grauer has estimated, the province will be short of power, as most of the available water sites are now being used or construction is going ahead on plants on them.

Power Demands Up

The province currently has enough power, supplied by B. C. Electric and the B. C. Power Commission, but new secondary industries are presently moving into the province at the rate of five a day and tempo is expected to increase.

The announcement of the new project is expected to take most of the steam out of the present controversy on whether the mighty Fraser River should be dammed, or left as the world's largest salmon river.

Fisheries Minister James Sinclair has said the Federal Government would never allow dams if they would destroy the multimillion-dollar fishery. His statements have been backed up by Premier Bennett.

The fish vs. power controversy had caused much bitterness between the power and fishing interests, two of the province's largest industries.

The mighty Mica Creek dam will generate more power than the Aluminum Co. of Canada's mighty plant at Kemano and Consolidate Mining & Smelting Co.'s system of dams in the Kootenays put together.

Alcan and Cominco, who use as much power between them as everyone else in the province, generate a total of 1,250,000 hp. All other power companies generate only 1,250,000 hp.

Areas around the dam will get first call on the electricity produced.

When completed, the new power plant will spell a new era for the vast interior of the province. It will pave the way for construction of giant metallurgical and chemical industries. Many mines which now lie dormant, although proven, are expected to open with the advent of cheap power.

Huge areas of semi-arid land which could be made fertile will be opened up as cheap power is used to operate giant pumping machines.

Many irrigation projects have been planned, but few have been put into effect because of the high cost of pumping.

Mr. Grauer said the benefits to B. C. from Mica Creek will not be confined to the power produced by the dam. A system of huge dams on the lower Columbia will benefit by the increased control over flood waters offered by the Mica Creek installation.

The big American dams, located at Grand Coulee, Bonneville, The Dalles, Chief Joseph and McNary, will be able to produce up to 30% more power when Mica Creek is built.

The Americans who will receive these downstream benefits have agreed to share the extra power with B. C.

Power experts are convinced that B. C. Electric is the only single company in Canada large enough to undertake the massive project. It has the experience and staff and has been interested in developing the Columbia. Last year it formed a subsidiary, Western Development & Power Ltd., whose primary function was to investigate the power possibilities of the Columbia and Fraser rivers. This subsidiary company will handle the details of the job.

Virtual green light for the Columbia job was given last week when General A. G. L. McNaughton, chairman of the Canadian section of the International Joint Commission, said the project was feasible.

B.C. Electric probably will borrow $25 million over the 10-year period to finance the project.

How To Crack Government Markets

By VINCENT EGAN

If your business is selling, don't overlook the biggest buyer of them all.

It's a buyer with branches everywhere in Canada, and in most foreign countries as well. Yet it's surrounded by the misconceptions of businessmen who could be selling to it profitably.

This billion-dollar buyer is the Federal Government. Last year alone it spent nearly $1.5 million on purchases of goods and services from business.

If you have something to sell but still cling to the notion that you need influence to do business with the Government, it's time to take a new look.

You don't have to know anyone in the Government to get your share of the Government market.

You don't have to be represented in Ottawa. A remote location can just as easily be an advantage as a disadvantage.

But you do have to approach this market with the same intelligent forethought you would use in "selling" any other major customer.

"First, stand back and ask yourself who buys your products," says a harried Ottawa purchasing agent. In the course of placing 25,000 purchase orders last year, his department had to turn away hundreds of would-be salesmen whose sense of logic should have directed them to other departments in the first place.

Having decided what departments are likely to need your products, let those departments know that you want a chance to do business with them. Don't wait for the purchasing agent to seek you out.

And, to save everybody's time, don't make your approach through your Member of Parliament or a cabinet minister. If the price and quality of your products are right, you'll get the order. If they aren't, you won't get it even if you're on first-name terms with every Member.

Must Have Factory

But before the Government will place an order, you must have facilities in being — a plant, or a bona fide contract under which you represent an existing manufacturer. Good intentions are admired, but you won't get orders for a factory that is still in the blueprint stage.

Heaviest volume of governmental purchasing is done by the Departments of Defense Production, Public Works and Transport. All other departments, however, are also in the market for a wide range of products.

Public Works, which provides maintenance for all Federal Government buildings in and around Ottawa, and for many other buildings throughout Canada, does most of its purchasing by contract.

Its warehouses throughout the country keep in stock the items used in heaviest volume. Its purchasing, too, is decentralized; every effort is made to buy non-standard items in the community in which they will be used.

On the other hand, most of the supplies needed by Public Works are standardized and bought in bulk. Furniture is a case in point: desks are sometimes ordered in quantities of 1,000.

If you bid for a government order but fail to get it, it's usually an easy matter to learn who your successful competitor was. Some departments withhold this useful information as a matter of policy, but others — including Public Works and Defense Production — will gladly give it to you.

There are still some "influence peddlers" in Ottawa who make their living by selling such information to unsophisticated businessmen. But they are a vanishing race. Ottawa just doesn't operate their way.

There are, on the other hand, many business representatives here offering a valuable and legitimate service (Post, June 19, '54). Lawyers, tariff consultants, trade and professional associations all fill a necessary and respected role.

Sales Representatives

Sales representation is one of the business services offered by Stuart Mackay-Smith's Corporation House Ltd., established 10 years ago. For its clients, it will take on the job of seeing that they are registered with the purchasing agents in each of the departments which might need their products.

Corporation House will help prepare tenders, attend public openings of tenders, report on government requirements. It doesn't offer political influence; it does offer specialized experience and skills in government-industry relations.

Remember that in Ottawa influence and introduction are not for sale. You can reach your man by letter or telephone. If you don't know the name of any department's puchasing agent, just ask the Government switchboard — CEntral 2-8211.

Each department of the Government has its own way of dealing with suppliers. In principle they are the same, but in detail they differ.

Here's how to do business with one Government department — Defense Production. It's the biggest buyer of all:

Begin by writing to the Secretary, Department of Defense Production, Ottawa, telling him that your firm is interested in obtaining some defense business.

You will then receive by mail a questionnaire from the Department. The questions to be answered will depend upon whether you are a manufacturer, distributor, manufacturers' agent, wholesaler, provider of services, food supplier, or a combination of any of these.

In general, you will be asked to say what items you are capable of and interested in selling to the Department, and to give such information as the size of your company, numbers of employees, etc.

When you return the questionnaire to Ottawa, your name goes on the list of potential suppliers of the products or services you have specified.

Chance To Compete

Thus you are assured that your firm will have a chance to compete when the Department is ready to buy. And it's ready whenever it receives notice from the Department of National Defense as to what the latter department needs and how much money it has set aside for the purpose.

One of the 20 purchasing units in Defense Production goes to its list of suppliers — the list your firm's name is now on, if you supply the item that National Defense wants.

The purchasing unit reviews its list of suppliers, and may delete certain names — if, for instance, it knows that a certain plant's capacity is taken up for months ahead. The buyers take full responsibility for any such deletion and must be ready to answer questions put to them by anyone from the Prime Minister down.

Invitations to tender are then mailed out to all suppliers. And enclosed will be a "failure to quote advice" — if for some reason your firm doesn't wish to bid on this order, return this "advice" to make sure that your name stays on the list to receive future invitations.

If you decide to tender, make sure that your tender reaches the Department of Defense Production by 5.00 p.m. on the closing date specified — and not one minute later. Send it in the envelope provided by the Department, which will indicate on the outside both your firm name and the tender you're bidding on.

Defense Production receives some 500 tenders a day, and stamps the time of receipt automatically on each. It never accepts a late tender.

If you've already mailed your tender but doubt that it will arrive in time, send the Department's secretary a wire quoting the tender number and all information — such as a firm price and all pricing components — that will permit a comparison of the wire with other tenders. If the original tender arrives later by mail, it will then take the place of the wire.

Sealed Tenders

Sealed tenders are kept in a safe overnight, and opened at 8.30 on the morning after closing day. All tenders are tabulated, discounts taken into consideration, and a successful tender chosen — the lowest bid meeting specifications.

The contract is then awarded by one of the purchasing divisions. If the amount involved is under $10,000, the head of the division awards the contract without further authority. If between $10,000 and $50,000, and the lowest bid is accepted, the Deputy Minister must approve. Treasury Board approval is required if the expenditure is over $50,000, or when other than the lowest bid is accepted, if it exceeds $25,000.

On rare occasions, chiefly where perishable foodstuffs are involved, the Minister or Deputy Minister of Defense Product may authorize the placing of a contract that would ordinarily require Treasury Board approval, to expedite matters.

On the Department's payroll, but acting in the capacity of an agent for industry at large, is Industrial Liaison Officer W. A. Fuller. It's his job to see that businessmen, particularly those representing small enterprises, get all the Defense Production business they deserve.

Fuller's role is to make sure that a company's facilities are known to the appropriate purchasing section of the Department. If a supplier is not invited to tender after having asked that his name go on the list, Fuller investigates and sees that the situation is corrected if necessary.

With people like Fuller and Departmental Secretary Jack J. Tevlin on the public payroll, businessmen can get all the information they need without cost. It isn't necessary to work through a "five-percenter" whose office is a hotel lobby.

Some of these agents, for example, make a practice of selling detailed information about successful bids. Actually, this is information that anyone — not necessarily a tenderer — may have for the asking, as long as the contract is not "classified."

Answers In 24 Hours

Departmental Secretary Tevlin does, in fact, receive some 1,700 requests a month for such information as the name of the successful bidder, price at which the contract was awarded, and delivery requirements. Most inquiries are answered within 24 hours.

Since it was established April 1, 1951, up to the end of 1955, Defense Production placed $5.4 billion in defense orders. Some 38% of this money went for aircraft and equipment, and 12% for construction. The other half was spread among communications equipment, ships, fuels, ammunition, clothing, and thousands of other items.

Last year alone, the Department placed 172,000 contracts and amendments, valued at $204 million, for goods and services not normally requiring special production facilities.

A host of small local orders, for such items as food, hardware, laundry services and the like, were placed locally in every part of Canada. Small individually, the 172,000 contracts added up to a multi-million dollar business.

Altogether, the Department placed orders valued at $726 million last year, down 40% from 1954 but only 11% below 1953. Expenditures were much higher, reflecting production activity on orders placed before 1955. Total spending was $975 millions in 1955, down slightly from 1954's $1,009 million.

There's defense business to be had indirectly as well as directly. Prime contractors frequently must parcel out to small companies equipped to handle subcontracts efficiently. If yours is a small company seeking defense subcontracts, here's a checklist of data to furnish to prime contractors:

Your Check List

—A general description of your plant, its facilities and location.

—A list of the type, kind, size and condition of machines you have.

—A statement of your available machine capacity, listing the products your plant makes and indicating the priority you could give to the prime contractor's orders.

—Name your potential source of tools, to show how long it would take to tool-up the job you're seeking.

—Describe your distribution facilities, such as sidings.

—Short biographies of your key personnel to indicate their experience, a description of your organizational set-up, details of labor force and supply.

—A description of your cost records, which should be up to government audit standards.

—Information about your financial standing; the prime contractor will have to determine this, and you might as well help him at the outset.

—A summary of your experience as a sub-contractor, if any.

W. A. FULLER
Industrial Liaison Officer,
Department of Defense Production

J. J. TEVLIN
Department Secretary,
Department of Defense Production

Saxaphone Sales

It takes more than ships, tanks and planes to run a defense force. Everything from bootlaces up may be found in the lists of purchases published semi-monthly by the Department of Defense Production.

Recently two orders totaling $40,000 were placed for saxophones. A Toronto firm won a $24,000 contract for 78 saxophones and cases, and a Waterloo, Ont., musical instrument dealer was awarded an order for 53 saxophones, worth $16,000.

The instruments were delivered to Central Ordnance Depot, Cobourg, Ont., to meet the needs of several military bands.

ANNOUNCEMENT

Royal Trust Appointment

A. L. PENHALE

The Royal Trust Company announces the appointment of A. L. Penhale of Thetford Mines and Montreal, as Eastern Townships Member of the Advisory Board of the Quebec Branch of the Company. Mr. Penhale is President and Managing Director of Asbestos Corporation Limited and a Director of a number of other important industrial companies. He is a Trustee of Bishop's University and a former President of Canadian Institute of Mining and Metallurgy.

INDUSTRIAL RELATIONS

"Labor Roundup"—another Post exclusive—reports on the practical side of industrial relations week by week. Keep yourself in touch with the trend of union activity. Read The Financial Post.

Yearly by mail in Canada $6: elsewhere $7 yearly.

Auto Sales Up 10%, Rocketing Higher

One of the most stubborn and oft-repeated untruths about our economy is the assertion that Canada is having a poor auto sales year.

Ford of Canada President Rhys M. Sale in an Edmonton speech this week (digest below) gave the lie to this. He said:

- **In the first five months of 1956, motor vehicle sales were up 10% from record 1955.**
- **A Ford survey predicts further uptrends in new car sales.**
- **Our economy is booming as never before. This helps auto sales.**

By RHYS M. SALE

Far from having a bad time of it, the Canadian automobile industry is having an excellent year.

Complete figures for May are not yet available, but we estimate that sales of cars and trucks in the first five months of 1956 have been 10% ahead of those for the some period of 1955.

We confidently expect that total sales for the whole year, barring unforeseen difficulties, will surpass the record totals of 1955.

The facts about motor vehicle sales—at record levels in Canada while running at least 20% below the 1955 rate in the United States—illustrate as well as anything the danger of assuming the Canadian economy is tied 100% to the economic wheels of the United States. We should take pride in our developing economic independence.

I have been astonished at the number of people who jumped to the false conclusion that Canada's auto industry is in a bad way.

They interpreted the relatively minor schedule curtailments in some of our plants as proof that Canadian automobile sales have slumped as badly as those in the United States.

As part of Ford's research program, we take periodic surveys of public opinion throughout Canada.

One question we regularly ask of the hundreds of people who are interviewed in all parts of the country, is one which inquires into their plans to buy new automobiles within the next 18 months. The answers we have had in the past have been uncannily accurate in indicating the probable size of the forward market.

A study was completed last month. It showed that substantially more people are planning to buy new cars within the coming 18 months than a year ago.

The most welcome news of all was that residents of the Prairie Provinces, who have ranked at the bottom of the list in recent years, have now leaped into first place as prospective buyers of new cars.

Sudden Change

The change was so sudden and so pronounced that we might have doubted the truth of the figures had it not been for two important developments on the national economic scene.

RHYS SALE says:

"We confidently expect that total sales for the whole year, barring unforeseen difficulties, will surpass the record totals of 1955."

The first is the good news concerning the outlook for wheat. Shipments are rising steadily and the volume of forward orders is such that if adequate shipping is available (which seems reasonably certain) wheat shipments this year will be equal to all of last year's crop.

You know much better than I do how much this will mean to western farmers whose incomes have been virtually stagnant since the decline two years ago. They will be able to deliver more and more of their wheat to the elevators, will have more cash in their pockets than has jingled there for many a month.

The second factor is the much-talked-of transCanada pipe line, for which Parliament has given the go-ahead signal after long and bitter debate.

The construction of the line alone will put millions of dollars into circulation across the West. Later, when the last seam has been welded and natural gas begins to flow to market, the release of the potential wealth now stored underground will pour great amounts of spendable income into the economy.

Western prospects are brighter than they have been for years. Your prosperity will reflect itself in better business across the nation.

The economy of Canada has never been healthier nor more buoyant. We have never had it so good. But some people still think our prosperity is too good to be true.

We have some pessimists in Canada whose main theme seems to be that any downturn in the economy of the United States must inevitably be duplicated in the Canadian economy.

They say the current mild recession in the U. S. will catch up with us in Canada sooner or later.

Dip Not Necessary

I do not think for a minute that we Canadians have to go through an economic dip, merely because our friends to the south have been experiencing one.

Why should we? Is there one good, sound reason why we should share every breeze of economic adversity that may sweep across the United States? That carries neighborliness much too far.

True, a readjustment is in progress in the U. S. A number of industries, notably automobiles, have suffered a slump in sales and there has been consequent unemployment.

But the slump generally has not been as severe as might appear from newspaper headlines. The American automobile industry still will enjoy the third-best year in its history.

Generally, the factors that caused the adjustment in the United States have had no counterparts in the Canadian economy. Our stock markets have had some of the backwash of upsets in U. S. exchanges, but otherwise the general economic situation south of the border has left us virtually untouched.

Top economists in Canada have shown small concern about the U. S. readjustment. They feel confident it is almost half over now, that there will be an upturn in the fall.

The only thing they fear at all would be a possible psychological reaction. There is always a chance that talk of the mild recession in the U. S. might result in a pessimistic attitude on the part of Canadians, even though there is no real reason for it.

There has been much talk recently on another important subject bearing on the state of our economy.

There has been a lot of fuss and fury over the amount of United States capital being invested in Canada. Some rather wild things have been said. We have seen a danger that emotionalism on this topic could run away with common sense.

The subject is one which warrants a mild measure of concern and a lot of cool, level-headed thinking, but woe betide us if it becomes a political football.

Voting Stock

There is nothing much a Canadian company can do about the movement of its voting stock. Anyone can buy it, if he is willing to pay the going price on the stock exchange. United States investors have shown a consistent willingness in recent years to put their money into Canadian enterprises.

My reason for saying this is to point out that in many, many instances, the transfer of Canadian equities out of the country results from our own apathy, our own unwillingness to take risks which outside investors seem to accept without hesitation.

If we feel strongly enough on this subject, then let us show a greater readiness to accept some of the hazards, as well as the rewards, of exploration and development of our resources and expansion of our industries.

But even if Canadians become very brave about this sort of thing, we simply could not raise the funds to finance the whole gigantic program of progress now under way in Canada.

We need outside capital in great quantity to augment our own in opening up our mines, sinking our oil wells, and financing the growth of industry.

We need have no real fears that we will lose our heritage to outsiders. Instead, we can be sure the influx of capital will not only help us to do the things that need to be done today, but will assist us in shaping a rich and fruitful future.

Elsewhere on the economic scene, Canada's foreign trade is running at record levels, with exports continuing month after month to exceed last year's figures.

The import figures are extraordinarily high, running currently $100 million a month over 1955. These, of course, reflect the huge capital investment program. A surplus import position is normal in period of strong economic expansion and this year it acts as a restraint against inflationary price spirals in Canada.

We need vast amounts of building materials and capital equipment. If we do not import part of what we need, the pressure of demand for our home supplies will push prices sky-high.

Employment Good

The employment situation is good. Any unemployment can be attributed largely to spotty local situations, certainly not to any general weakness in the economy. The likelihood is that the seasonal downturn in employment next fall will be less than it was a year ago, which in turn showed an improvement over the preceding winter.

Against this backdrop of a national economic picture that could not be more promising, we in the automobile industry are looking ahead with confidence.

We feel sure the final sales figures for 1956 will be a little better than those of 1955, and that 1957 will bring a continuance of the strong upward trend.

There have been some misconceptions in Canada about auto assembly plants.

The big companies in the United States have assembly plants at strategic locations from coast to coast. Ford has four in California alone.

We are sometimes asked: "If Ford in the United States finds it profitable to ship components all the way from Detroit to California for assembly, why would it not be equally profitable for Ford of Canada to have assembly

(Continued on page 27)

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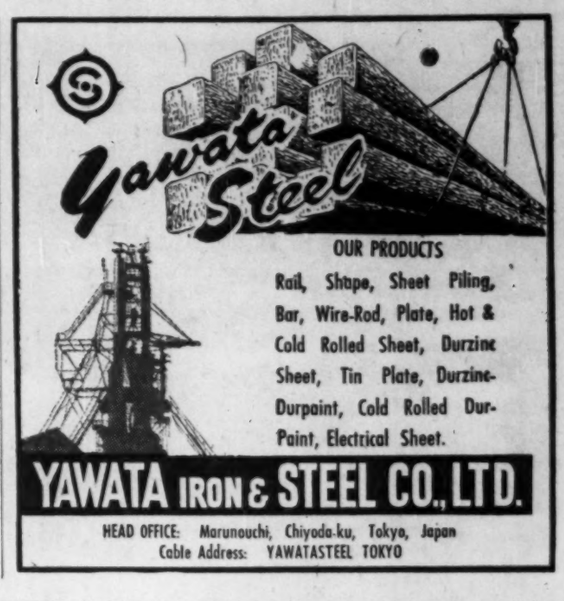

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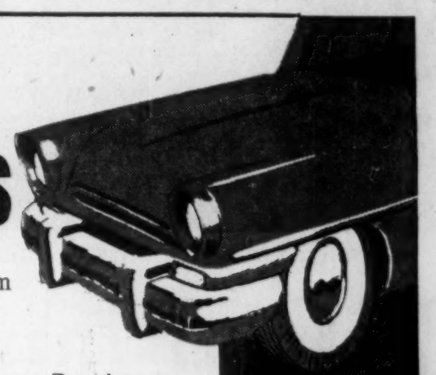

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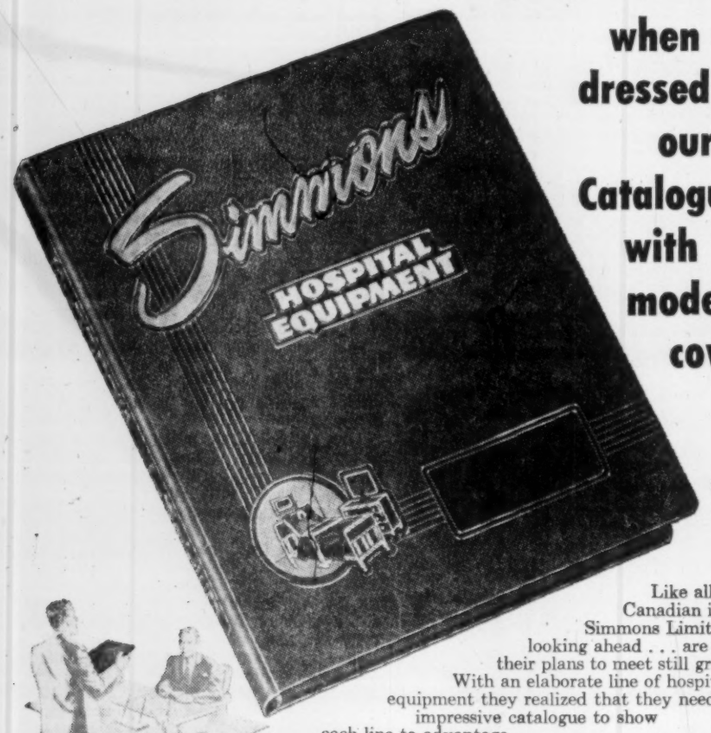

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Like all progressive Canadian industries . . . Simmons Limited are looking ahead . . . are consolidating their plans to meet still greater demand. With an elaborate line of hospital and hotel equipment they realized that they needed an impressive catalogue to show each line to advantage.

As their new book was then in production, they decided to make a break with the past . . . to discard the conventional black covers and use instead, a custom designed binding. A rich colour was selected to which was applied a distinctive cover design. The result was overwhelmingly favourable.

Their salesmen felt a new sense of importance as they placed the catalogue on a prospect's desk . . . their customers now use it in preference to others. This modernizing of the catalogue is bringing marvelous returns . . . and after several years of hard use these catalogues still remain fresh and new.

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From many different industries come enthusiastic reports about the excellent impression modern covers create. Specially designed bindings are now in strong demand for Company presentations; catalogues; sales manuals; parts manuals, price lists, etc.

Reason why we at Brown Brothers produce so many of these modern covers, is that our plant is exceptionally well equipped for this type of work. Every stage of production from first sketches to finished binding is processed under one roof . . . an important factor in reducing costs.

Specimens of our covers and sketches of cover designs . . . together with details of production and quantity prices . . . can be in your hands immediately. You can either fill out the coupon below, or call our Sales Promotion Department, PLymouth 5-5201.

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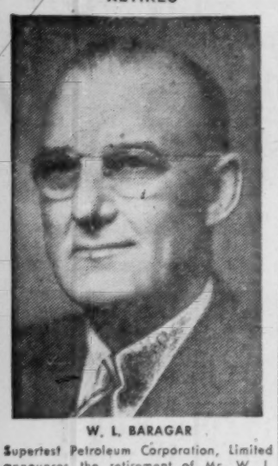

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Supertest Petroleum Corporation, Limited announces the retirement of Mr. W. L. Baragar under the Company's retirement plan. Mr. Baragar joined Supertest in 1925 as General Manager and in 1929 was appointed Vice-President and General Manager. His outstanding executive ability resulted in his election as President in 1950, which position he has held until the present.

Mr. J. Gordon Thompson, who was President of the Corporation until 1950, was re-elected to fill the vacancy resulting from Mr. Baragar's retirement.

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New Trading Stamp Scheme May Be Route Around Law

By DONALD GORDON

Fifty thousand housewives in the Ottawa Valley are the guinea pigs for a food store trading stamp plan that may turn Canadian retailing upside down.

The plan, introduced in the Independent Grocers' Alliance group of 95 stores serviced by Ottawa wholesaler M. Loeb Ltd., is the most provocative Canadian retail development in years. Here's why:

- It marks the first move of Gold Bond Stamp Co., one of the largest operators in the U. S., into Canada.
- Preliminary results indicate, for the first time in years, that the independents using the plan are winning big chunks of business away from chain store.
- It appears to be a legal way around Criminal Code regulations banning trading stamps in Canada.

From these three factors could be the results:

(1) Exploitation of trading stamp schemes throughout Canada backed by the merchandising know-how and promotion skill of major American operators. Canadians will quickly start to catch up with American shoppers on the stamp merry-go-round.

(2) Acceleration of the weeding-out of weak sisters in food stores. Chain reactions to lost business are certain to be quick and competitive (A & P, for one, is rumored planning a stamp plan of its own).

(3) In the long-run, adoption of trading stamps as a standard traffic-building tool along with advertising and special event promotions.

The Big Questions

But there are two big ifs.

- The stamp plan, in effect since mid-May, may not work out. Promoters currently claim big business gains, but their figures are far from statistically concrete.
- The stamp plan may be ruled illegal. So far, no court action has been taken as a test of the Ottawa scheme. Backers say they don't expect any. Opponents say they do.

The Retail Merchants Association of Canada, an association of mainly independent food stores, has, in effect declared war against trading stamps and various premium plans in Canada. At a meeting in Toronto this week, RMA executives resolved to "continue to oppose trading stamps, coupons, give-aways and lotteri " and to "take whatever action necessary, legal or otherwise, in the interests of all retailers and consumers."

"Gold Bond is trying to find a way around the trading stamp law," F. A. B. Rands of RMA told The Financial Post. "We don't think they have."

Both the RMA and the Canadian Association of Consumers have urged legal action against similar stamp plans. RMA objects basically because it feels small operators — the bulk of its membership — will suffer. CAC is opposed because it feels trading stamps result in higher prices to consumers (since many stamp-using stores drop specials and other price-cuts).

"Trading stamp schemes build fabulous profits for the stamp companies, tend to throw prices up and take business from smaller stores to large ones," Mr. Rands said. "In the long run, it's an economically unsound proposition.

However, it is expected that the stamps will get in. Legal opinions currently available do point out some possible basis for a charge under the Criminal Code — for example, on the claim that the stamps are in fact redeemed by Gold Bond—but slight changes in the plan as it now operates could probably eliminate any flaws.

In the roughly five weeks of operation, these results are reported for the Gold Bond stamps:

Shopping week ended:	Gross sales incr. over aver. of Jan. 1-May 1 period
May 19	48%
May 26	39.5%
June 2	61%*
June 9	48%
June 16 (est.)	75%*

*Civil Service pay week in Ottawa Valley. (Week of June 16 was also IGA "Dollar Day" promotion in area.)

These figures present problems. The Jan.-May period is not necessarily a sound comparison since retail sales generally for that period are below those for mid-year. However, Gold Bond officials claim the food lines involved are largely staple-type items which don't fluctuate as much as general groceries.

Preliminary analysis of the results to date has indicated that cost of the extra business garnered for the IGA group stores has come from chain store competitors. Several store owners said it was the first time in year that they had managed to pull volume trade away from the chains for a sustained period.

The Ottawa area was chosen by Gold Bond because it was regarded as a good cross-section to provide comparison figures applicable for other Canadian regions. Containing roughly 600,000 population, it includes urban, suburban and rural store outlets, varied income groups, French and English sections, an assortment of food retailing stores including supermarkets and small units. The area covers roughly the district bordered by Ottawa, Pembroke, Cornwall and the Quebec side of the Ottawa river.

So far, an estimated 50,000 housewives are collecting the stamps. Premium cash-ins are forecast at a roughly $625,000 - $800,000 a year clip (retail value) when the initial stamp saving period is over. Plan sponsors calculate there will be a better than 90% redemption of stamps.

Gold Bond officials said individual retailers need a roughly 13% increase in gross sales to cover cost of the plan. On the basis of results so far they estimate that gross sales for the 95-store group will increase from the current level of about $18.2 million to about $30 million a year — an increase of 65%.

"This will vary with individual operators," one official told The Financial Post. "Because of this, plus the fact that the chain stores will undoubtedly counter in kind, some uneconomic units may suffer."

Main reason: General adoption of the stamps will have the effect of reducing margins of net profit for the whole industry — stores unable to absorb the profit cut will be hit.

A side effect to date has been reduction of expensive fringe services offered by stores using the stamp plan. Prior to use, 35% of the stores offered credit facilities and/or telephone ordering service. Since then, 85% of these units have either dropped the extra services completely or have instituted a 2% service charge for credit.

Enforce Law On Trading Stamps Urged

Trading stamps—a form of discount—came in for sharp criticism this week at the annual meeting of Dominion Stores Ltd. If laws now governing trading stamps in Canada are not enforced, said Thomas G. McCormack, president, the result could be a 2% increase in Canadians' food bills and a serious loss to Canadian farmers.

"For 50 years," said Mr. McCormack, "the law has protected Canadian shoppers. Now, for several months past there have been violations in several sections of Canada."

Canadian laws were amended at the turn of the century after U.S. promoters had sold worthless certificates in this country. This practice, he implied, could produce in higher food item costs the equivalent of a 2% tax on everybody's food bill.

He noted that in Los Angeles one trading stamp promoter accumulated an $18-million reserve for uncashed stamps in one year. Exempt from income tax as accounts payable, it earned at 3% interest some $540,000 a year.

Mr. McCormack also predicted that coming years will see great advancements in production, processing and distribution of food to keep pace with the needs of Canada's growing millions.

Auto Sales Up 10%, Rocketing Higher

(Continued from page 26)

facilities in British Columbia or Alberta?"

The reason, of course, is volume.

There are 6,200,000 cars and trucks licensed in California, not quite twice as many as there are in all of Canada.

Annual sales in California exceed those in Canada. The people of Los Angeles county and city buy almost five times as many motor vehicles in a year as do the populations of British Columbia and Alberta combined.

There simply is no comparison between the automobile markets of the U. S. and Canada. The market south of the border is overwhelmingly greater, not only on a population basis, but in the buying power of the people.

There are 63 million motor vehicles in use in the U. S., as against 3.9 million in Canada. To put it on a relative basis, there is one vehicle for each 2.7 persons in the U. S., and one for each four in Canada.

The number of motor vehicles in ratio to population has been rising faster in Canada than in any other country on earth.

Since 1945, Canadians have bought 2.5 million new passenger cars and 900,000 new trucks, with the result that we have two and one half times as many vehicles on our highways today as we did at the end of World War II. Annual sales climbed from 120,000 vehicles in 1946 to 466,000 last year.

Alberta has the highest ratio of motor-vehicle ownership to population among all provinces of Canada.

At the end of the last licensing year, Alberta had 236,000 passenger cars and 116,000 trucks, or one vehicle to each three persons. Ontario, Saskatchewan and British Columbia came close behind, with ratios of one vehicle to each 3.2 persons.

Ontario had the largest number of vehicles, and also had the highest ratio of ownership of passenger cars, one to each four persons.

Taking into account the growth and shifts of population, and the rising incomes of their people, the Prairie Provinces and British Columbia are likely to have three million cars and trucks by 1980 and will be buying new motor vehicles at the rate of 300,000 a year. Just to give you an idea of what that represents, the total production of Ford of Canada in 1955 was 165,700 vehicles.

Row Now Bosses Chrysler Export

One of Canada's top automakers, Chrysler's E. C. Row, has taken on another big job.

President of Chrysler of Canada for the last five years and organizer of the nation's most successful auto sales comeback, Row has been elected president of Chrysler Export Corp. He continues as president of the Canadian company.

This makes Row boss of all Chrysler operations outside of the U. S.

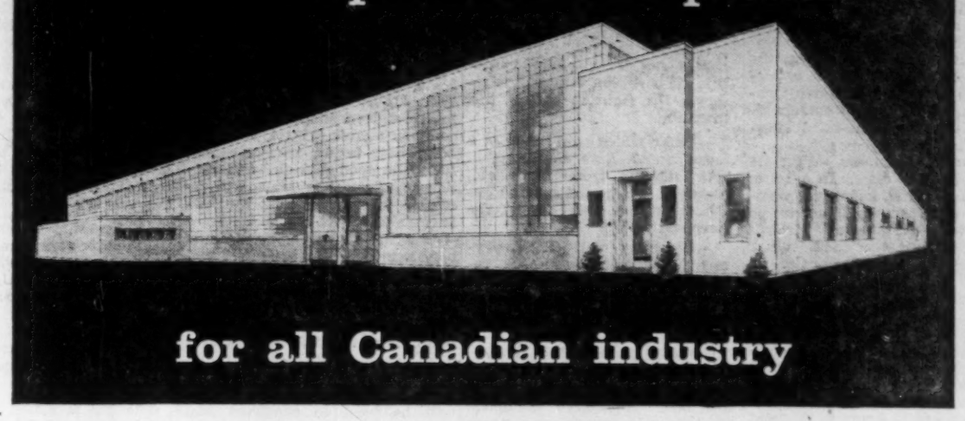
The team of young executives developed by Chrysler in the past few years will take over some of the duties which have been attended to personally by Row. This will give him more time for his export job.

At midweek, Ron. W. Todghan was named executive vice-president of Chrysler of Canada. Under Row, he will have overall responsibility for all Chrysler operations.

Chrysler of Canada, under Row's direction, has come from a very distant third (behind General Motors and Ford) in all new car sales two years ago to a point where this year it is seriously challenging Ford for second spot.

Before joining the Canadian company in 1942 Row served for several years as director of operations for the export company.

Here, we convert *IDEAS* to products and profits for all Canadian industry



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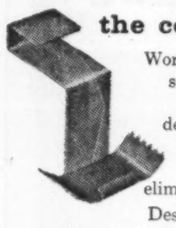
"Imagination is given the reins" at the Hamilton plant of Dominion Fasteners Limited. Here, through a combination of up-to-date facilities and creative personnel, this Canadian company is constantly inventing, developing and producing better fastening methods for industry.

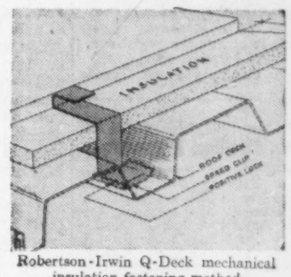
Manufacturers of the famous line of SPEED NUT brand spring tension fasteners, Dominion Fasteners Limited are always ready and able to provide any industry with an efficient and economical solution to any attachment problem.

here's an example of how the construction industry profits . . .



Working with ROBERTSON-IRWIN LIMITED, a major supplier of steel roof deck to the Canadian construction industry, Dominion Fasteners Limited created and developed a new type SPEED CLIP for the attachment of insulation to roof deck. The precarious fire hazard associated with former methods was completely eliminated . . . as well as many other installation problems.

Designed and developed entirely in Canada by Canadians, this new addition to the SPEED NUT family of over 6000 types and sizes of fasteners is now being adopted in the U.S.A.



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Here's U.S. Packer's Offer For Can. Canners Shares

By the end of this week, some 5,300 shareholders of Canadian Canners will receive a formal proposal which, if accepted, will shift control of Canadian Canners to California's giant food processing and packing organization, California Packing Corp.

By the terms of the offer, the U. S. company will obtain a two-thirds interest in Canadian Canners and the existing shareholders will retain a one-third interest. (FP, June 2.)

Canadian Canners directors back the U. S. offer. In a letter dated June 18 W. I. Drynan, president, urged shareholders to go along with the deal and deposit share certificates and other papers with Royal Trust Co.

Here are the main points in the California Packing Corp., offer:

—It is conditional on each of the existing shares (468,137) being split into one class A common share and two class B common shares without nominal or par value. Shareholders are being asked to agree to this and to sign a proxy which, in effect, will allow the split to be made.

—Offer applies to the class B shares for which California Packing will pay $15 each. Company will pay this price if at least 90% of the 936,274 new B shares are deposited with Royal Trust although the company may waive this percentage if it wishes.

—If California Packing acquires 90% of the shares it will invoke Section 128 of the Companies Act if necessary to obtain all B shares, although it reserves the right to change this intention.

—Offer which is outlined in a letter dated June 8 expires in four months from that date, although this period may be extended at the discretion of the purchaser.

—Company will make payment one week after the required percentage of shares have been turned in and letters patent are granted confirming the stock split.

The 468,137 new class A common will remain in the hands of the existing shareholders. These will bear cumulative dividends of 75c per share per year which is equivalent to 5% on a value of $15 per share. All dividends on the class B shares will be deferred for five years. After the five-year period and after all arrears of cumulative dividends on both classes of shares have been paid, both will rank equally share-for-share in any increased dividends over 75c per share per year.

In the same way the A shares will rank equally with the B upon any winding up or other distribution of assets after payment of any dividend arrears on A and B. If six quarterly dividends on the class A shares are in default, the A shareholders will be entitled as a class to representation on the board of directors. Thus A shares have a double advantage: They rank prior to B shares and at the same time retain the pro rata right to share in future growth of assets and earnings. Both A and B shares will carry one vote.

In his letter to shareholders, President Drynan stated that California Packing had assured the present management that it would continue to direct operations and that California Packing would include on the board of directors a substantial representation of Canadian businessmen.

Plan $16 Mill. Cement Issue

Registration statement in connection with the securities proposed to be offered publicly in the financing of Lake Ontario Portland Cement Co., has been made with the U. S. Securities & Exchange Commission.

The statement covers $6,497,400 5½% debentures due June 30, 1971; 232,050 $10 par 5% convertible preferred shares and 696,150 common shares. First mortgage bonds have been placed privately. It's understood that about $4 million of the public issue will be offered in Canada, with the balance in the U. S.

Nesbitt, Thomson & Co. is handling the issue in Canada and Kidder, Peabody & Co., the U. S. offering. The securities are expected to be offered in a package of $700 principal amount of debentures at about 96½, 25 shares of preferred at about $10 a share, and 75 shares of common at $1.

Proceeds of about $16 million will be used to construct and operate a cement and commercial aggregate plant on the shore of Picton Bay, Lake Ontario (FP, May 5).

U. S. Shipowners May Get Big Subsidy on New Craft

WASHINGTON, D.C. — The U. S. Senate has passed a bill which may give American shipowners a head start over Canadian shipping in the increased Great Lakes traffic expected with completion of the St. Lawrence Seaway.

The Senate-approved bill provides a heavy subsidy for American ship owners. Opponents say it will cost the U. S. Government more than one billion dollars. Those in favor of the measure say it will cost the Government only about $75 million in the next five years.

At present, American Great Lakes shipowners are not eligible for the general shipbuilding subsidy offered by the U. S. Government. The Government, however, is opposed to this bill. It says the bill "constitutes a subsidy in the domestic trade which we do not grant to other operators in the domestic trade."

The bill is aimed at replacing most of the 343 American-owned ships sailing the Great Lakes carrying iron ore, limestone, coal and grain. It would provide a subsidy to owners in this manner: an owner could trade in his present ship to the Government.

The Government would pay him the difference between what the owner pays for a new ship built in American yards and the price he would have had to pay in a foreign ship-building yard. Foreign yards are able to build ships considerably cheaper than American yards.

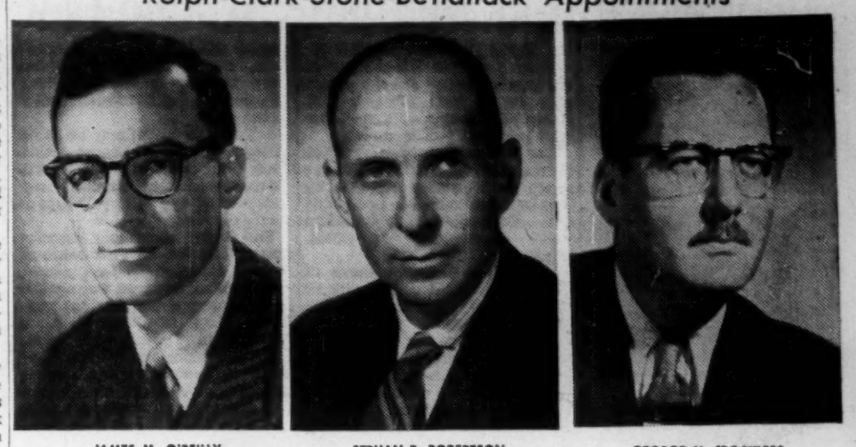
One opponent of the measure said a company which presently owns several ships it bought from the Government for $102,000 each some years ago, could get a subsidy of up to $4,000,000 on each vessel.

If the bill should be okayed by the House and signed by the President, American Great Lakes ship owners are expected to flock to the ship-building yards with orders for new vessels.

CANADIAN BREWERIES LTD. between May 30 and June 8 issued an additional 530 common shares upon conversion of same number of $1.25 cumulative convertible preferred shares. Now 405,560 preferred shares and 3,053,044 common shares outstanding.

ANNOUNCEMENT

Rolph-Clark-Stone-Benallack Appointments



JAMES M. O'REILLY — STRUAN R. ROBERTSON — GEORGE M. STOCKLESS

Three important personnel appointments, effective immediately, are announced by Rolph-Clark-Stone-Benallack, Limited, Montreal, following a recent meeting of the Board of Directors. James M. O'Reilly has been appointed Controller of the company and will retain his present duties as Secretary and Treasurer; Struan R. Robertson has been elected a Director; George M. Stockless has been appointed Sales Manager. The other Montreal directors of the Company are: — R. L. Cummings, S. A. Innes, F. W. McLaughlin and James O'Connor.

Foreign Insurance Companies Act
Affiliated Underwriters

Notice is hereby given that Certificate of Registry No. C1802 has been issued as at 24th May, 1956, by the Department of Insurance, Ottawa, to Affiliated Underwriters (New York City, U.S.A.), authorising it to transact in Canada the business of Personal Property Insurance, in addition to the classes for which it is already registered.

LESLIE PHILLIPS,
Chief Agent for Canada

Foreign Insurance Companies Act
American Exchange Underwriters

Notice is hereby given that Certificate of Registry No. C1803 has been issued as at 24th May, 1956, by the Department of Insurance, Ottawa, to American Exchange Underwriters (New York City, U.S.A.), authorising it to transact in Canada the business of Personal Property Insurance, in addition to the classes for which it is already registered.

LESLIE PHILLIPS,
Chief Agent for Canada

Foreign Insurance Companies Act
Individual Underwriters

Notice is hereby given that Certificate of Registry No. C1804 has been issued as at 24th May, 1956, by the Department of Insurance, Ottawa, to Individual Underwriters (New York City, U.S.A.), authorising it to transact in Canada the business of Personal Property Insurance, in addition to the classes for which it is already registered.

LESLIE PHILLIPS,
Chief Agent for Canada

Foreign Insurance Companies Act
Metropolitan Inter-Insurers

Notice is hereby given that Certificate of Registry No. C1805 has been issued as at 24th May, 1956, by the Department of Insurance, Ottawa, to Metropolitan Inter-Insurers (New York City, U.S.A.), authorising it to transact in Canada the business of Personal Property Insurance, in addition to the classes for which it is already registered.

LESLIE PHILLIPS,
Chief Agent for Canada

Foreign Insurance Companies Act
New York Reciprocal Underwriters

Notice is hereby given that Certificate of Registry No. C1806 has been issued as at 24th May, 1956, by the Department of Insurance, Ottawa, to New York Reciprocal Underwriters (New York City, U.S.A.), authorising it to transact in Canada the business of Personal Property Insurance, in addition to the classes for which it is already registered.

LESLIE PHILLIPS,
Chief Agent for Canada

NOTICE

CALEDONIAN-AMERICAN INSURANCE COMPANY

OF NEW YORK, N.Y.

Notice is hereby given that the Caledonian-American Insurance Company of New York, N.Y., having ceased to carry on business in Canada and having reinsured its liabilities in Canada in the Caledonian-Canadian Insurance Company of Toronto, Ontario, which is registered under The Canadian & British Insurance Companies Act 1932, as amended, to transact business in Canada; will apply to the Minister of Finance for the release on the 30th day of July 1956, of the securities on deposit with the Minister of Finance; and that any Canadian policyholder opposed to such release should file his opposition thereto with the Minister of Finance —Ottawa on or before the 30th day of July 1956.

Dated at Toronto, Ontario, this 16th day of April 1956.

Signed REGINALD L. YOUNG,
Chief Agent in Canada.

NOTICE

Notice is hereby given that Certificate of Registry No. C1791 dated May 7, 1956, has been issued to the Manufacturers Mutual Fire Insurance Company authorizing it to transact in Canada the business of Fire Insurance, Aircraft Insurance, Automobile Insurance, Boiler Insurance, Explosion Insurance, Inland Transportation Insurance, Machinery Insurance, Personal Property Insurance, Plate Glass Insurance, Real Property Insurance, Theft Insurance and, in addition thereto, Earthquake Insurance, Falling Aircraft Insurance, Hail Insurance, Impact by Vehicles Insurance, Sprinkler Leakage Insurance, Water Damage Insurance, Weather Insurance and Windstorm Insurance, limited to the insurance of the same property as is insured under a policy of Fire insurance of the Company.

A. T. JOHNSON,
Vice-President & Secretary.

James P. McD. Costigan,
Chief Agent in Canada,
Toronto, Ontario.

Arthur Abbott CAE President

MONTREAL (Staff) — The Canadian Electrical Association has elected as its new president Arthur C. Abbott, vice-president in charge of distribution, Shawinigan Water & Power Co. He succeeds J. A. Page, president of Southern Canada Power Co. Elected vice-president was Norman T. Smith, general manager, Nova Scotia Light & Power Co., Halifax, N.S.

More than 650 delegates from throughout Canada—representing all phases of the electrical industry — attended the convention, held at Murray Bay, P.Q., this week. They included representatives of public utility companies, provincial electricity commissions, muncipal electric systems, electrical manufacturers and consulting engineers.

In his presidential address, Retiring President Page summed up the current position of electric power production in Canada and outlined contemplated expansion. He told CAE members that if the current rate of growth in the demand for electricity continues, as much in new plant will be built in Canada within the next 10 years as has been built to date.

Featured speaker at the convention was Edwin Vennard, New York, recently appointed vice-president and managing director of the Edison Electric Institute. He spoke on the importance of public relations to utilities.

Other speakers included Gilbert E. Jackson, of Gilbert E. Jackson Associates, Toronto, who spoke on the pattern of growth in Canada; Dr. M. Alt, of the Arthur D. Little Organization, Cambridge, Mass., "Utility Leadership in Industrial Development"; and John J. Deutsch, treasury board, Ottawa, who dealt with the position of the electrical, manufacturing industry in the Canadian economy.

New members of the Association's executive committee are: L. R. Douglas, Canadian General Electric Co., Toronto; C. M. Laing, Eastern Light and Power Co., Sydney, N.S.; D. MacLaren, MacLaren-Quebec Power Co., Buckingham, Que.; D. O. Ramsdale, English Electric Co. of Canada, St. Catharines, Ont.; G. H. Milligan, Maritime Electric Co., Charlottetown, P.E.I.; F. F. Fulton, Northern Electric Co., Montreal.

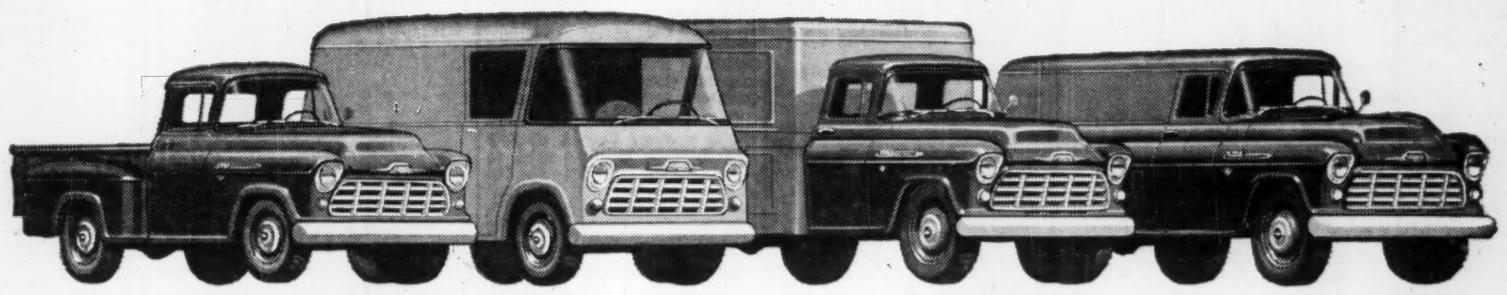
Southam Co. Buys North Bay Nugget

Sale of The North Bay Nugget, North Bay, Ont., to Southam Co. of Toronto for an undisclosed sum gives Southam its eighth daily newspaper.

Southam states that there will be no staff, editorial or operational changes in the policies of the 12,521 circulation daily.

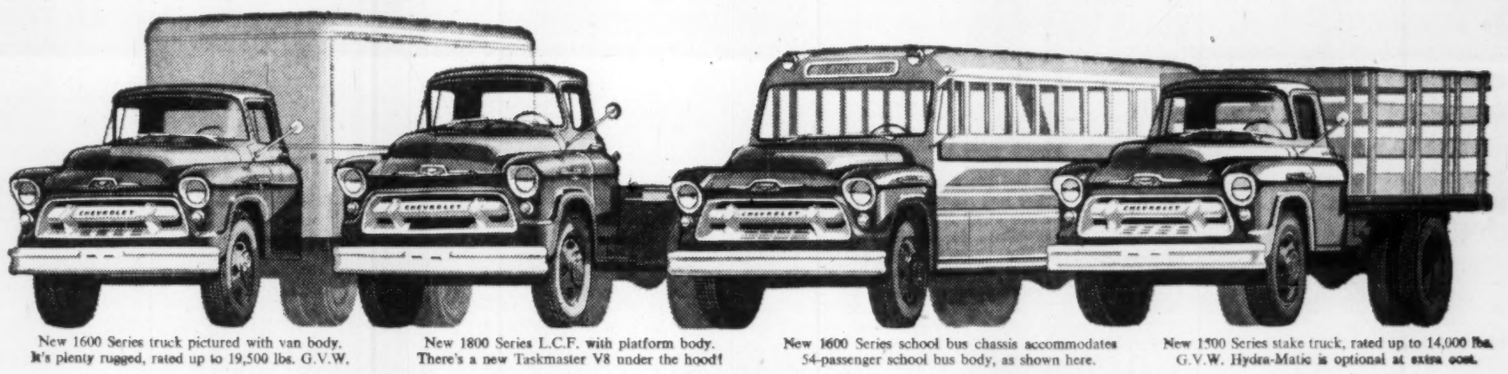
Company's other newspapers are the Hamilton Spectator, Ottawa Citizen, Calgary Herald, Edmonton Journal, Winnipeg Tribune, Vancouver Province and Medicine Hat News.

Packing the biggest power punch in history!



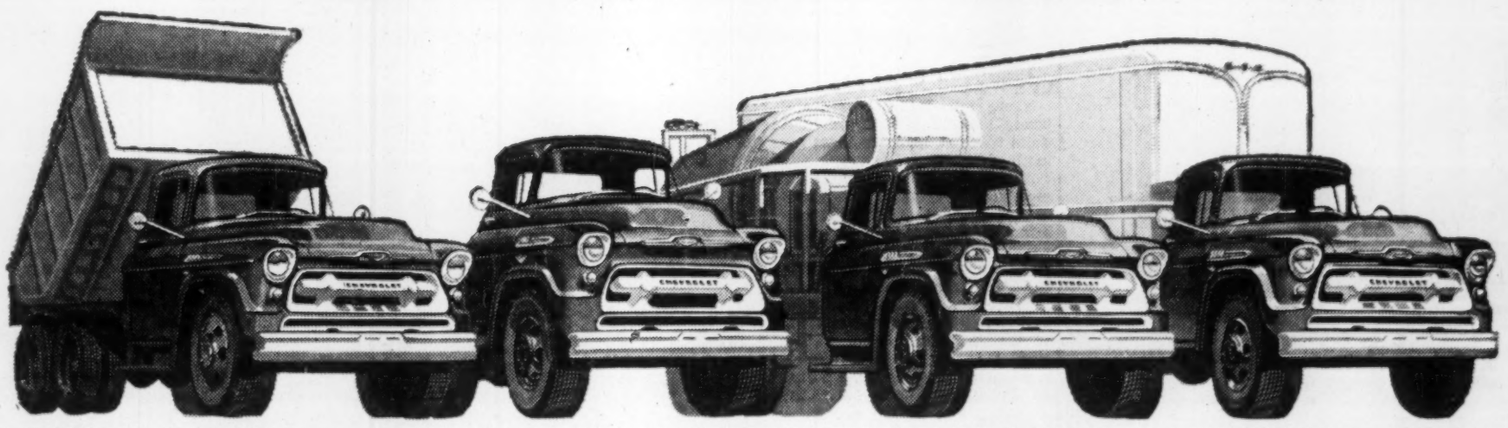
New 1300 Series truck, Model 1314, a ½-ton pickup with roomy body and grain-tight tailgate. New ¾-ton Forward Control chassis, Model 1457, shown here with special parcel delivery body. New 1-ton truck, Model 1433 illustrated with refrigerator body. It's rated up to 8,800 lbs. G.V.W. New 1-ton panel, Model 1435. Load space is over 13½ feet long at right of driver's seat.

NEW LIGHTWEIGHT CHAMPS!



New 1600 Series truck pictured with van body. It's plenty rugged, rated up to 19,500 lbs. G.V.W. New 1800 Series L.C.F. with platform body. There's a new Taskmaster V8 under the hood! New 1600 Series school bus chassis accommodates 54-passenger school bus body, as shown here. New 1500 Series stake truck, rated up to 14,000 lbs. G.V.W. Hydra-Matic is optional at extra cost.

NEW MIDDLEWEIGHT CHAMPS!



New W1900 Series truck with Triple-Torque tandem. Rated up to 32,000 lbs. G.V.W., 50,000 lbs. G.C.W. New 7000 and 9000 Series L.C.F. (Low Cab Forward) cab and chassis, rated up to 25,000 lbs. G.V.W. New 1900 Series truck illustrated with concrete mixer unit. Powered by the new Loadmaster V8! New 1700 Series model shown as tractor with semi-trailer. Rated up to 21,000 lbs. G.V.W. and G.C.W. of 35,000 lbs.

NEW HEAVYWEIGHT CHAMPS!

Great new choice in power plants — 7 brilliant engines, V8 and 6!

A modern, short-stroke V8 for every model — Trademaster V8 and Taskmaster V8 with 155 or 167 horsepower, and a big brand-new 322-cubic-inch Loadmaster V8 with horsepower of 195 or 215! Chevrolet's four famous 6's are higher in horsepower (up to 148 h.p.!), higher in compression — super-efficient, ultra-economical workhorses!

New wider choice in transmissions — automatic and Synchromesh!

Now — a work-saving, engine-saving automatic for every series! The range of Hydra-Matic models has been expanded, and Chevrolet proudly introduces an exclusive new heavy-duty 6-speed automatic — Powermatic, with the Hydraulic Retarder that saves service brakes! Two new 5-speed Synchromesh transmissions highlight a complete line of Synchromesh transmissions for every model!

New wider choice in axles — carrying capacities boosted!

A new front axle, load-rated at 7000 lbs. on the heavy duty series—new single and double speed rear axles with really big-rated capacities up to 18,000 lbs.! Here's a trucking "first" — the revolutionary new Triple Torque Tandem axle, a single and 2-axle drive in one unit, with separate positive drive to each axle from a 3 speed power divider! New confidence for all your on-the-road, off-the-road operations!

Anything less is an old-fashioned truck!

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Co-op Spells Big Business

Split-Profit Societies $20 Million Giant In Nova Scotia

By JACK McARTHUR

When the month of May arrived in the small Cape Breton town of Sydney Mines in 1906, warm weather strollers discovered a new addition to the business community.

Tucked modestly on a side street was a small grocery store. Its unique feature: It was a co-operative, with just 38 coal-miner members.

That first year, the British Canadian Co-operative Society did a business of just $16,000.

But, confidently, it planned and carried out an expansion program for the following year.

Since then, there have been many more expansions, of a size to stagger the original coal-miner-founders.

The British-Canadian today is probably the best-known co-op in a province known for its co-operatives. Nova Scotia co-ops now do business at a rate approaching $20 million yearly.

The British-Canadian now has seven branch stores, a bakery and modern milk plant, two service stations, more than 4,000 members. In 1954, it did a $3.6 million business, had a whopping gross trading margin of 22%, a total net gain for members of 6.3% after operating expenses.

It's so big that Nova Scotia agriculture department statistics list it separately. Total assets in 1954: Almost a million dollars.

Nova Scotia Co-ops Flourish

	Number of Co-ops	Members	Total Business —$ 000—
1938	59	10,545	2,886
1940	62	11,721	3,191
1942	65	11,996	3,874
1944	61	13,224	5,305
1946	81	17,180	8,445
1948	108	22,398	12,838
1950	113	22,464	14,167
1952	111	22,950	15,951
1954	112	23,000	16,892

The British-Canadian was one of the early co-ops, but it missed being first by 45 years. Canada's first co-op store pried the lid off the cracker barrel and set out its bulk cheese in 1861. It's location: Stellarton, N.S.

This was only 17 years after the Rochdale pioneers had begun their famous English venture. The Stellarton co-op was set up by a group of coal-miners. Its moving spirit was a dedicated businessman named James Mitchell. When he retired in 1914, the co-op withered and died for want of good administrators.

Failure was the fate for many early Nova Scotia co-ops. The reasons for their troubles were just about the same as those for any business demise.

Shortage of capital was common. Many of the co-ops were set up by working men (often miners) who had little money — the capital of the original Stellarton store was only $1,000.

Another difficulty was the variability of working conditions. When coal sales were buoyant, the little coal-miner co-ops did a bustling business. But when there were layoffs in the mines, sales melted away. The co-ops weren't financially able to extend credit (in any event, that goes against co-operative principle) and lost customers.

Fire Troubles

Catastrophe — mainly fire — was another important cause of trouble. So was the shortage of competent, honest administrators. Some co-ops fell under the control of spellbinding confidence men who talked inexperienced members into giving them purse-string control.

W. L. Mackenzie King, much later to become prime minister of Canada, figured importantly in formation of one early co-op.

King, at that time federal deputy minister of labor, went to Sydney to help in settling a steelworkers' strike. One of his recommendations: That the workers start a co-op store aimed at saving money in the purchase of consumer goods.

The result was the formation of the Sydney Co-operative Society in 1903. For a time it prospered greatly. Eventually, a fire halted its expansion. This was a blow from which it never recovered.

Of the early days, R. J. MacSween of the Nova Scotia Agriculture Department says (In "Co-operation in Nova Scotia").

"It was a period of struggle and, in some cases, of frustration.

"But it was a period in which some progress was made in laying a foundation for future development.

" . . . In those early days the main objective in forming co-operatives was to reduce the cost of merchandise and supplies. There is no doubt but that a great deal of progress was made in attaining that objective . . . "

The work and worry of the old Nova Scotia co-operators piled up a backlog of experience drawn upon by later ventures across the country.

Co-op retail stores today do the bulk of Nova Scotia's co-op trading. In 1954, the breakdown: The British Canadian, $3.6 million total sales; other co-op stores, $8.1 million; fishermen's co-ops, $1.8 million; other co-ops (creameries, seed co-ops, breeders' co-ops, etc.), $3.4 million.

Some $10 million worth of Nova Scotia produce is marketed co-operatively every year. The breakdown here:

Fish, $3.1 million; dairy products, $2.6 million; poultry, $1.2 million; hogs, $1 million; apples, $860,000; vegetables, $460,000; cattle and calves, $260,000; pulpwood, $220,000; sheep and lambs, $98,000; wool $80,000; strawberries, $80,000.

The net worth of all co-ops, except wholesalers, is more than $4 million.

Three agencies have been in the thick of co-operative affairs. The Provincial and Federal Governments have pushed formation of co-ops, often as self-help organizations for producers or workmen weathering a low-income period.

The third agency is St. Francis Xavier University at Antigonish, which has become internationally known as a centre of co-operative knowledge and experience.

An example of the work by St. FX is the prodigious task undertaken by Dr. M. M. Coady in 1929.

Depression Period

This story goes back to the end of World War I. After the war a long period of depression began for Nova Scotia fishermen.

Traditional markets were glutted, prices nosedived. By the mid-twenties poverty had swamped the economy of the east coast fishery.

Then followed a Royal Commission investigation, which discovered new methods had passed the fishermen by. Their ways of marketing were primitive.

Acting on the Commission's recommendation the minister of fisheries named Coady of St. FX to do the job of co-operative organization which the fishermen had failed to do.

Coady covered every important fishing area in the Maritime Provinces within a few months. Working ceaselessly, he established more than 100 local fishermen's groups.

Their function: To get up-to-date fishing and marketing information; to see that it was spread widely among fishermen; to make representations to governments and other groups; to advance generally all interests of their members.

In 1930, these small locals met to set up the United Maritime Fishermen.

These organizations, not co-operatives in themselves, were the forerunners of co-operatives. Throughout the 1930s, dozens got into commercial activity.

The job of educating co-operators in sound business practice, of advising on formation of co-ops has been done by St. FX and government people. One of the best ways of getting started, it has been found, is to form a credit union. It's fairly easy to operate, provides a real-life example of how co-operation works.

For the future of Nova Scotia co-operation, more expansion looks likely. It probably will spread through all co-op fields—retailing, wholesaling, credit unions, mutual insurance, co-operative housing associations.

Black Nylon Yarn New Textile Twist

Color-sealed black nylon yarn, latest development in the textile field, will be made available immediately to Canadian mills through Du Pont Co. of Canada.

The new product is described as a "basic advance" which opens up a broad range of creative possibilities. The "rich black" of the fibre is locked in by the application of the dye when the yarn is manufactured. Demonstrations show it will withstand continued strong sunlight and countless washings.

The new product, developed in U.S. by E. I. Du Pont de Nemours & Co., has the physical properties and qualities of standard nylon yarn. An important factor is that the new yarn can be used in combination with others in fabrics for piece dyeing. It can also be treated by the various texturing processes available to nylon.

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How Life Firms Handle Stocks

Canadian life insurance companies have an investment of $80 millions in Canadian stocks. As professional investors, their stock holdings and transactions carry wide interest.

As a service to its readers, The Financial Post presents here the second of a series reporting on the holdings of individual companies, as well as changes in their portfolios of Canadian preferred and common stocks last year.

Crown Life

Crown Life Insurance Co., Toronto, reduced its holdings of preferred stocks to 3.1% from 3.3% of total invested assets. Company maintained its holdings of common stocks at 3.5%. Stocks were carried on its balance sheet at $14,018,546 at Dec. 31, 1955 ($13,021,795 a year earlier).

During the year, in its holdings of Canadian stocks, Crown Life:

—Added two preferreds and two commons.

—Eliminated seven preferreds and three commons.

—Increased five commons.

—Reduced two preferreds and one common.

Here are company's holdings of Canadian preferred and common stocks at Dec. 31, 1955, together with changes from the previous year:

	Shares Held at Dec. 31 1955	Change Since Dec. 31 1954
Preferred Stocks:		
B. C. Electric 4%	1,060	.....
Do. 4¾%	1,000	.....
B. C. Telephone, 4¾%	1,000	+1,000
Nova Scotia L & P 4½%	500	.....
Shawinigan W & P 4%	....	—3,700
Do. 4½%	1,000	.....
Aluminum Co. 4.50%	2,500	+2,500
Anglo-Can. p. & p. $2.80	1,000	.....
Biltmore Hats $1 A	2,500	.....
Davis Leather $1.50 A	2,000	.....
Dom. Glass 7%	4,250	.....
Fittings Ltd. 60c A	2,000	.....
G. Mackay & Stores $0.50 A	5,500	.....
Hamilton Cotton 5%	200	—50
Howard Smith Paper 4%	....	—1,350
Internti Metal Indus. 4½%	930	.....
Lawson & Jones $1 A	1,250	.....
Loblaw Groceterias, 50c A	1,500	.....
McColl-Front. Oil, 4%	....	—500
Modern Cont., $1 A	2,550	.....
Molson's Brew., 80c A	2,000	.....
Nat. Drug & Chem., 60c	3,000	.....
Nat. Grocers, $1.50	3,500	.....
P. L. Robertson Mfg., $1	2,000	.....
Shirriff's Ltd., 5%	1,150	—100
G. Tamblyn Ltd., 4%	100	.....
United Corps. $1.50 A	1,100	.....
Zeller's Ltd., 4½%	1,500	.....
CPR	2,000	.....
Bell Telephone	8,171	—1,429
Calgary Power	2,000	+2,000
Aluminium Ltd.	....	—2,420
B-A Oil	20,000	.....
Building Products	2,000	.....
Burlington Steel	1,700	.....
Can. Iron Foundries	1,000	.....
Cdn. Breweries	4,750	.....
Cdn. Canners	2,500	.....
Cdn. Celanese	1,500	+500
Cdn. Cottons	200	.....
Cdn. Oil Cos.	5,000	+5,000
Cdn. Wallpaper, B	1,500	.....
Conduits Nat.	2,200	.....
Cons. Mng. & Smltg.	6,300	.....
Dist. Corp.-Seagrams	7,500	.....
Dome Mines	2,000	.....
Dom. Bridge	10,000	.....
Dom. Oilcloth & Lino.	2,000	.....
Dom. Tar & Chem.	7,100	.....
Dom. Textile	4,500	.....
Ford Motor Co. of Can., A	1,000	.....
Henry Morgan	200	.....
H. Walker-Good. & Worts	3,000	.....
Hollinger Cons. Gold	2,000	.....
Imp. Oil	1,650	.....
Imp. Tobacco	2,000	.....
Internat. Nickel	....	—6,000
Lake Shore Mines	2,000	.....
Laura Secord	2,000	.....
Massey-Harris-Ferg.	5,000	.....
McIntyre Porc. Mines	1,300	.....
Molson's Brewery, A	....	—500
Moore Corp.	....	—3,200
Nat. Grocers	....	—2,500
Noranda Mines	7,000	+3,500
Ogilvie Flour	800	.....
Page-Hersey Tubes	1,000	.....
P. L. Robertson Mfg.	1,000	.....
Russell Ind.	12,000	.....
Stedman Bros.	4,000	.....
Superfest Pete.	3,970	.....
Wool Combing	1,500	.....
Wright-Hargreaves Mines	20,000	.....
Argus Corp.	5,000	+1,000
Bank of Montreal	2,500	.....
Bank of Nova Scotia	4,500	.....
Bank of Toronto	....	—2,000†
British America Assce.	200	.....
Canada Perm. Mtge.	3,500	.....
Cdn. Bank of Comm.	5,562	+1,112
Chartered Trust	563	.....
Crown Trust	1,200	+1,100*
Dominion Bank	....	—3,000†
Eastern Trust	1,250	+250
Imperial Bank	4,285	+1,285
Montreal Trust	5,000	.....
National Trust	1,400	.....
Royal Bank	2,400	.....
Toronto-Dom. Bank	5,666	+5,666†
Toronto General Trusts	3,365	.....

*Stock split.

†Exchange on formation of new bank.

The company's invested assets at the year-end consisted of 44% bonds, 39.1% real estate, 7.7% policy loans, 6.6% stocks, and 2.6% real estate. An analysis of invested assets at the end of each of the last four years shows as follows:

	1955 %	1954 %	1953 %	1952 %
Bonds:				
Government	20.2	24.3	27.0	30.0
Municipal	2.9	3.2	3.5	3.7
Other	20.9	21.2	20.8	19.1
TOTAL	44.0	48.7	51.3	52.8
Mortgages (Urban):	39.1	34.2	32.8	30.8
Policy Loans	7.7	7.8	7.8	7.8
Stocks:				
(a) Preferred	3.1	3.3	3.6	4.2
(b) Common	3.5	3.5	3.3	3.6
TOTAL	6.6	6.8	6.9	7.8
Real Estate	2.6	2.5	1.3	0.8
Grand Total	100.0	100.0	100.0	100.0

Dominion Life

Dominion Life Assurance Co., Waterloo, Ont., reduced its holdings of preferred stocks to 2.7% from 3.2% of total invested assets. Company increased its holdings of common stocks to 1.3% from 1%. Stocks were carried on its balance sheet at $1,604,091 at Dec. 31, 1955 ($1,314,436 a year earlier).

During the year, in its holdings of Canadian stocks, Dominion Life:

—Added four preferreds.

—Eliminated three preferreds.

—Increased one preferred and one common.

—Reduced one preferred.

Here are the company's holdings of Canadian preferred and common stocks at Dec. 31, 1955, together with changes from the previous year:

	Shares Held at Dec. 31 1955	Change Since Dec. 31 1954
Preferred Stocks:		
Abitibi Pwr. & P., 4½%	1,800	.....
Acadia-Atlantic Sug., 5%	200	.....
Aluminum Co., 4½%	3,100	+3,100
Do., 5¼%	....	—1,000*
Anglo-Cdn. P. & P., $2.80	1,225	.....
Anglo-Cdn. Tele., 4½%	1,000	.....
Beaver Lumber, $1.40	1,675	.....
B. C. Electric, 4¾%	1,000	.....
B. C. Telephone, 4¾%	500	+500
Do., 4¾%	500	.....
Cdn. Celanese Ltd., $1.75	1,000	—100
Cdn. Tire Corp., $1	1,000	.....
Cdn. Utilities Ltd., $5	250	.....
Dom. Tar & Chem., $1	....	—800
Estabrooks (T. H.), 4.16%	735	.....
Fittings Ltd., 60c	2,000	.....
Gordon Mackay & St., 50c	2,250	.....
Hahn Brass, 80c	3,000	.....
Hamilton Cotton, 5%	500	.....
Hughes-Owens Co., $1.60	1,000	.....
Imperial Tobacco, 6%	....	—900
Massey-Harris-Ferg., 4½%	565	+565
Mersey Paper, 5%	....	—500*
Henry Morgan, 4¾%	....	—500
Nat. Drug & Chem., 60c	3,000	.....
Nat. Grocers, $1.50	1,000	.....
N. S. Lt. & Pwr., 4½%	650	.....
P. L. Robertson Mfg., 6%	2,000	.....
H. Simon & Sons, 5%	100	.....
United Corps., $1.50	1,500	.....
Western Grocers, $1.40	1,000	+195
Zeller's Ltd., 4½%	750	+750
*Called.		
Common Stocks:		
Abitibi Power & Paper	4,200	+4,200▲
Bell Telephone	1,900	+200
B-A Oil	16,500	+4,000▲
Hudson's Bay Co.	1,125	.....
Interprov. Pipe Line	1,000	.....
Saskatoon Pipe Line	400	.....
Sincennes-McNaughton L.	250	.....
Waterloo Trust	1,000	.....

▲Conversion of debentures.

The company's invested assets at the year-end consisted of 47.8% bonds, 38.8% mortgages, 4.9% policy loans, 4% stocks, 3.4% real estate and 1.1% other. An analysis of invested assets at the end of each of the last four years shows as follows:

	1955 %	1954 %	1953 %	1952 %
Bonds:				
Government	12.0	15.6	21.7	23.5
Municipal	5.2	5.2	5.1	4.9
Other	30.6	31.7	30.8	30.9
TOTAL	47.8	52.5	57.6	59.3
Mortgages:				
Farm	0.1	0.1	0.2	0.3
Urban	38.7	34.4	30.5	29.9
TOTAL	38.8	34.5	30.7	30.2
Policy Loans	4.9	5.0	5.0	5.1
Stocks:				
(a) Preferred	2.7	3.2	2.9	3.2
(b) Common	1.3	1.0	0.7	0.6
TOTAL	4.0	4.2	3.6	3.8
Real Estate	3.4	2.8	1.5	1.0
Other	1.1	1.0	1.6	.6
Grand Total	100.0	100.0	100.0	100.0

Empire Life

Empire Life Insurance Co., Kingston, Ont., reduced its holdings of preferred stocks to 1.1% from 1.5% of total invested assets. Company reduced holdings of common stocks to 3.5% from 5.6%. Stocks were carried on its balance sheet at $1,228,969 at Dec. 31, 1955 ($1,687,483 a year earlier).

During the year, in its holdings of Canadian stocks, Empire Life:

—Added one preferred and four commons.

—Eliminated five preferreds and 14 commons.

—Increased one preferred and six commons.

—Reduced two commons.

Here are the company's holdings of Canadian preferred and common stocks at Dec. 31, 1955, together with changes from the previous year:

	Shares Held at Dec. 31 1955	Change Since Dec. 31 1954
Preferred Stocks:		
Aluminum Co., 5¼%	....	—250
Do. 4½%	500	+500
Anglo Cdn. Tele.	200	.....
Cdn. Celanese	1,000	.....
Cdn. Cottons	350	.....
Central Canada Invests.	100	.....
Davis Leather	300	.....
Dom. & Anglo Invests.	450	+150
Dom. Tar & Chemical	....	—800
Gen. Steel Wares	300	.....
Imp. Tobacco	....	—1,000
Imp. Flo-glaze Paints	440	.....
Indust. Acceptance	....	—100
Henry Morgan	250	.....
Morrow Screw & Nut	100	.....
Rolland Paper	200	.....
Shawinigan W. & P.	....	—800
N. Slater Co.	200	.....
So. Canada Power	100	.....
George Weston	300	.....
Common Stocks:		
Aluminum Co.	....	—2,000
B-A Oil	....	—2,000
Can. & Dom. Sugar	1,000	+1,000
Can. Perm. Mtge.	1,000	.....
Cdn. Breweries	1,000	+1,000
Cdn. Canners	....	—1,000
Cdn. Celanese	2,000	+1,000
Cdn. Cottons	2,000	.....
Cdn. Oil	1,000	.....
Cdn. Westinghouse	....	—500
Central Can. Invests.	1,000	.....
Con. Mng. & Smltg.	2,000	+2,000
Consumers' Gas Toronto	....	—2,000
Dist. Corp.-Seagrams	....	—2,000
Dome Mines	1,500	.....
Dom. Fdries & Steel	2,500	—2,500
Dom. Textile	2,000	.....
Economic Invest. Trust	1,000	—500
Falconbridge Nickel	....	—1,000
Imperial Oil	2,000	+1,000
Imp. Flo-glaze Paints	500	.....
Internat. Nickel	....	—2,500
Interprov. Pipe Line	3,000	+3,000
MacMillan & Bloedel	....	—2,000
McColl-Front. Oil	....	—1,000
Nat. Trust	2,000	.....
Noranda Mines Ltd.	1,000	.....
Ogilvie Flour	2,000	+1,000
Price Bros.	1,000	.....
Royal Trust	7,250	+1,750*
Russell Indust.	1,000	+500
Saskatoon Pipe Line	160	.....
Shawinigan W. & P.	....	—1,000
Steel Co.	....	—3,200
Superfest Petroleum	....	—2,000
Toronto Mtge.	610	+360
H. Walker-Good. & W.	....	—1,000

*Stock split.

The company's invested asests at the year-end consisted of 53% bonds, 35.8% mortgages, 5.4% policy loans, 4.6% stocks and 1.2% other. An analysis of invested assets at the end of each of the last four years shows as follows:

	1955 %	1954 %	1953 %	1952 %
Bonds:				
Government	11.4	13.1	15.8	20.8
Municipal	12.3	10.9	10.3	10.0
Other	29.3	29.7	27.7	26.6
Total	53.0	53.7	53.8	57.4
Mortgages:				
Urban	35.8	33.1	30.8	26.9
Policy Loans	5.4	5.5	5.5	5.3
Stocks:				
(a) Preferred	1.1	1.5	2.4	3.2
(b) Common	3.5	5.6	5.6	5.2
Total	4.6	7.1	8.0	8.4
Real Estate	1.2	1.3	1.3	1.4
Other	..	0.3	0.6	1.2
Grand Total	100.0	100.0	100.0	100.0

Fidelity Life

Fidelity Life Assurance Co., Regina, reduced its holdings of preferred stocks to 3.4% from 3.7% of total invested assets. Company increased its holdings of common stocks to 2.8% from 2.6%. Stocks were carried at $415,522 at Dec. 31, 1955 ($387,746 a year earlier).

During the year, in its holdings of Canadian stocks, Fidelity Life:

—Added four preferreds and seven commons.

—Eliminated five preferreds and one common.

—Increased five commons.

—Reduced one common.

Here are the company's holdings of Canadian preferred and common stocks at Dec. 31, 1955, together with changes from the previous year:

	Shares Held at Dec. 31 1955	Change Since Dec. 31 1954
Preferred Stocks:		
B. C. Electric, 4%	50	.....
Do. 4¾%	50	.....
B. C. Telephone, 4¾%	100	+100
Cdn. West. NGLH&P, 4%	150	.....
Gatineau Power, 5%	30	.....
N. S. Lt. & Pwr., 4½%	102	.....
Shawinigan W. & P., A 4%	200	.....
Do. B 4½%	100	.....
Aluminum Co., 4%	140	.....
Do. 4½%	636	+636
Do., 5¼%	....	—250
Bailey Selburn O. & G.	200	+200
Beaver Lumber, $1.40	1,150	.....
Burns & Co., A	....	—150
Can. Cement	148	.....
Can. Foils Ltd., A	200	.....
Can. Packers, A	100	.....
Can. Safeway, 4.40%	150	+150†
Do. 5%, 1st	....	—150†
Do. 5%, 2nd	....	—100†
Cdn. Celanese, $1.75	100	.....
Cdn. Ice Machine, A	300	.....
Casmont Industries, 7%	....	—50
Dom. Fdries. & Steel, 4½%	100	.....
Dom. Glass, 7%	200	.....
Easy Washing Mach., 5% A	500	+500
Husky Oil, 6%	200	.....
Imp. Tobacco, 4%	....	—400
McCabe Grain, A	300	.....
Robertson (P. L.) Mfg., $1	300	.....
United Grain Growers, A	250	.....
Western Grocers, $1.40	150	.....
Industrial Accept., 5%	....	—150
United Corps., A	400	.....
Common Stocks:		
CPR	200	.....
Bell Telephone	300	—200
Consumers' Gas Toronto	200	.....
Shawinigan W. & P.	141	+41
Abitibi P. & P.	200	+200
Bailey Selburn O. & G., A	....	—625
Beaver Lumber	200	+200
B-A Oil	1,200	+400
Burns & Co.	360	+360
Consolidated M. & S.	500	.....
Cons. Paper	200	+100*
Hollinger Gold	500	.....
Home Oil	225	.....
Hudson Bay M. & S.	100	.....
Imperial Oil	200	.....
International Nickel	200	.....
Loblaw Groceterias, B	50	.....
McIntyre Porcupine	50	+50
MacMillan & Bloedel	150	+150
Moore Corp.	300	.....
Ogilvie Flour	100	.....
Powell River	200	.....
Russell Industries	200	.....
Sherritt Gordon Mines	400	+400
Steep Rock Iron Mines	500	+500
Westeel Products	200	.....
Bank of Commerce	125	+25
Imperial Bank	150	+50
Bank of Montreal	125	.....
Bank of Nova Scotia	200	.....
Royal Bank	120	.....
Toronto-Dominion Bank	433	+33
Cdn. Invest. Fund Ltd., Special	1,000	.....

†Exchange. *Stock split.

The company's invested assets at the year-end consisted of 61.6% bonds, 21.7% mortgages, 7.3% policy loans, 6.2% stocks, 1.5% real estate and 1.7% other. An analysis of invested assets at the end of each of the last four years shows as follows:

	1955 %	1954 %	1953 %	1952 %
Bonds:				
Government	36.0	36.7	44.0	45.6
Municipal	9.3	10.3	9.9	9.0
Other	16.3	14.8	14.0	11.1
TOTAL	61.6	61.8	67.9	65.7
Mortgages:				
Farm	0.1	0.1	0.2	0.4
Urban	21.6	20.5	15.1	16.5
Total	21.7	20.6	15.3	16.9
Policy Loans	7.3	7.6	7.8	7.8
Stocks:				
(a) Preferred	3.4	3.7	4.0	4.1
(b) Common	2.8	2.6	2.2	2.2
TOTAL	6.2	6.3	6.3	6.3
Real Estate	1.5	1.9	1.2	1.7
Other	1.7	1.8	1.4	1.8
Grand Total	100.0	100.0	100.0	100.0

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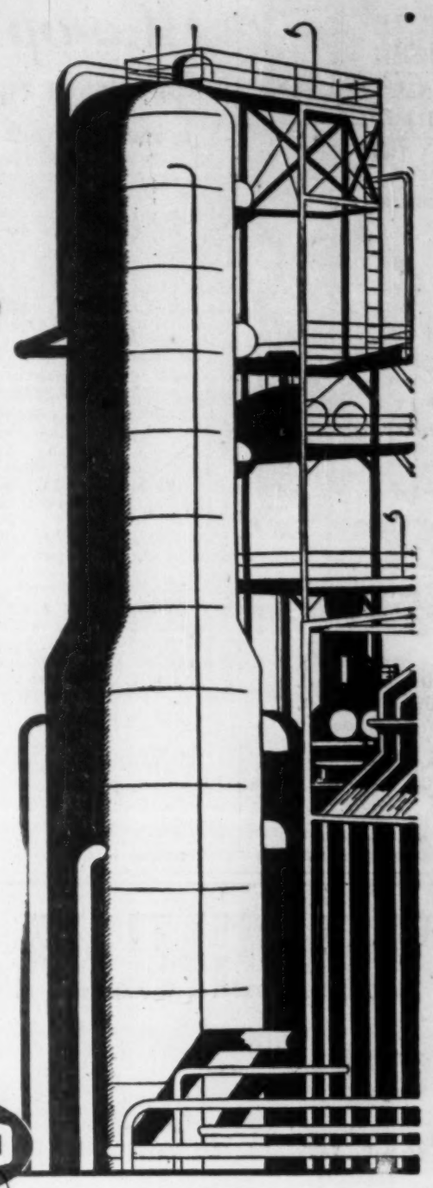

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Be It Ever So Mobile This Is Luxury Home

By JOHN P. MACLEAN

Peace, permanence and prosperity have come to the Canadian mobile home business.

The bright picture of two years ago (FP, Aug. 14, 1954) has come true and the future continues to show signs of getting even better.

Some signs:

● Hard feelings between mobile home owners and permanent residents have about disappeared in Angus, Ont., near the Army's Camp Borden. Provincial legislation passed this spring (a) did away with a 1952 bylaw prohibiting parking of homes on wheels more than 60 days in one spot and (b) allowed municipalities (unable to tax as in the case of permanent homes on the basis of property) to get revenue through licenses.

● The Department of National Defense has recognized the new way of life. It now allows camp commanders to extend camp facilities (i.e., hydro, garbage collection) to mobile home parks. DND may even—although it has already decided against it for the moment—buy mobile homes and rent them to servicemen who prefer them to houses.

● Mobile home production to reach 5,000 units this year continues just about to double annually. (An additional 1,000 homes are to be rolled in from the U. S.)

Circumstances such as the breadwinner's needing to move every year or so have a lot to do with the purchase of mobile homes, but now that manufacturers are catering to the housewife, more and more families more or less permanently settled are turning to mobile home living.

Here's why. In the new models coming off production lines this week to retail at less than $8,000, you get:

—A 10-ft.-by-46-ft. home which can be pulled by any Big Three car.

—A 10 - ft. - by - 16 - ft. living room.

—Two 10-ft.-by-10-ft. bedrooms.

—Automatic washing machine.

—Built-in TV and hi-fi radio.

—Foam rubber-covered furniture which includes chesterfield.

—Jalousie windows (like big Venetian blind panels turned sideways).

—Standard 10-cu.-ft. refrigerator.

—Four-burner gas stove.

—Bathroom with 54-in. bath (apartment size), shower, sink, toilet, and vanity table.

In addition, you get such extras as full-length mirrors which pull down to make ironing boards, and tables in the children's bedroom which are the beds' sides when the beds are folded up into the wall. Ceilings in the living-room now tend to be 7 ft. and 7 ft. 6 in., instead of 6 ft. 6 in. Drapes, floor-length, have replaced curtains.

These and other attractions — such as living on a much larger lot now usually 40 ft. by 60 ft.— are the reasons the number of persons living in mobile homes has jumped from about 20,000 two years ago to an estimated 60,000 today.

Parks for mobile homes are coming into existence at the rate of 50 a year; there are about 300 in Canada now. The Canadian Mobile Home Association thinks this country should have 600 at present. (Detroit, CMHA says, has 130 parks containing about 8,000 homes. Toronto should have 30 instead of just four.)

Biggest markets: The RCAF and Army's servicemen, construction workers, then mining men in such blossoming communities as Blind River, Bancroft and Sudbury, in Ontario; Val d'Or, Chicoutimi and Chibougamau in Quebec; and Western oil communities.

What's also made mobile home owning popular is easier financing. Two years ago, finance companies felt "taking paper" on mobile homes was a much more risky proposition even than on cars. The feeling was that a family might up stakes in the middle of the night and drive off into the dark blue.

Today, mobile home financing is the same price as auto financing and much more eagerly sought after, according to Traders Finance Corp. Ltd. and Pacific Finance Credit Ltd., both of Toronto, who handle most of the mobile home business. Usual terms: 25% down, five years to pay.

Part of the answer for the buildup of reliability is that mobile homes aren't really mobile in the usually imagined sense of the word. Moves take place only about once a year, often only once every two or three years. Another part is that mobile home owner, particularly oil and construction workers, have incomes well over average.

In the Blind River area, CMHA guesses, average rate of income earnings is close to $10,000 a year.

Higher incomes have meant demands for "more for the money," not only in mobile homes themselves but in the parks they stop in.

Going, going, almost gone is the day when water-less, hydro-less, sewer-less parks can keep mobile tenants. Only the fact the sales are proportionately greater than growth of parks accounts for such situations.

For instance, present-day mobile home owners at Pleasant Valley Tourist Court Ltd. in Toronto Township have individual water, light and septic tank connections. And the park will have direct sewer connections as soon as any individual home in the township when construction begins next year.

Canada's Largest

Canada's largest park, Cedar Grove Mobile Home Park, at Cooksville, near Toronto, has 26 acres and 127 mobile homes. Similar to Pleasant Valley, Cedar Grove has automatic washing machines and a store, plans a recreation hall.

Rates vary across Canada, averaging about $25 per month per family of four. Size of the mobile home doesn't matter; it's the number of persons using the facilities that determines the cost.

In the U.S., rates are only slightly higher. But facilities sometimes are amazing.

In Palm Springs, California, Bob Hope, Bing Crosby, Barbara Stanwyck and other movie stars own a $375,000 layout holding 175 mobile homes. Rent is high at $100 a month, but the park has a swimming pool and paved streets.

In Florida, the world's largest park-to-be will have 3,000 spaces (200 right now), its own post office address and one mile of private ocean beach. Appliance dealer Wilbur Guernsey is spending $1 million on it to cater to retiring Americans, a market untouched as yet in Canada.

About a dozen Canadian firms now make mobile homes. Eight years ago only 20 homes were made all year; next year's estimated production: 10,000.

In Ontario: H. B. McGinness Ltd., Peterborough; Glendale Mobile Homes Ltd., London; Twentieth Century Mobile Homes Ltd., London, a company new this year headed by former Glendale Sales Manager R. M. Phinney, 28, which will produce one mobile home a day beginning July 1; General Coach Works of Canada, Ltd., Hensall; Mid-States (Canada) Ltd., Ingersoll, U.S. subsidiary which began production this week; and Bilt-Rite Mobile Homes Ltd., Sarnia.

In the West: Redlick Trailer Co. Ltd., Brandon, Man.; Rambler Trailers of Winnipeg; United Trailer Co., Ltd., Calgary; Pacific Trailer Co. Ltd., Vancouver; and Weyburn Manufacturing Co. Ltd., Regina, Sask., which comes into production next month.

Experience of Glendale is perhaps typical. Founded by ex-Englishman Reg L. Thorn, now 42, in London, Ont., in 1950, it did $12,000 worth of business that year. Number of employees? One.

The record since:

1951	$ 54,000
1952	143,000
1953	452,000
1954	960,000
1955	1,700,000
1956	3,000,000 (est.)

Glendale's Thorn leaves July 10 for India.

"Somebody out there saw one I sold a Canadian missionary and wants to go partners on a plant," he told The Financial Post. "This must be one of the fastest-growing businesses there is."

Tried To Ship Grain Self, Barred By Wheat Board Law

From Our Own Correspondent

WINNIPEG — The constitutional status of the Canadian Wheat Board Act headed for the Supreme Court of Canada when the Manitoba Court of Appeal on June 13 upheld its statutory position and the grain marketing system it governs.

Lawyers for Stephen Franic Murphy, operator of a turkey ranch at Mission, British Columbia, said the case would be carried to Ottawa for final decision.

Two years ago Murphy delivered three bags of grain, one each of wheat, oats and barley, to CPR freight offices in Winnipeg, tendered freight charge of $6.76, for their shipment to Mission. The company refused it because Murphy didn't have a permit to ship the grain from the Wheat Board.

On this set of facts he filed suit asking the Court to declare that as a common carrier the company had to accept a shipment of grain which was his own property.

At the trial hearing before Mr. Justice Ralph Maybank of the Court of Queen's Bench, Murphy's case was dismissed. Judgment was upheld by the Court of Appeal whose five judges were unanimous.

The legal argument hinges on the allocation of jurisdiction to the Dominion and provinces under the B.N.A. Act. The crux of the Appeal Court decision was that the transaction was within the field of trade and commerce, exclusively a matter of federal jurisdiction, and that in this respect the Wheat Board Act is intra vires of the Parliament of Canada.

Murphy's lawyers stressed the point that also under the B.N.A. Act the natural produce of any one province must be admitted free to any other province. On this ground they argued the Wheat Board legislation was unconstitutional in enacting that no person other than the Wheat Board shall transport or cause to be transported from one province to another wheat or wheat products. This section is also applicable to oats and barley which must be marketed through the Wheat Board.

Loophole Left

In the over-all picture the Court held the Wheat Board Act was valid in the field of trade and commerce. In this case it was noted that Murphy bought the grain in Manitoba and tendered it for shipment to a company in B.C. of which he was president and chief shareholder. It was held to be a commercial transaction and the fact it may have infringed on property and civil rights was only incidental.

The Appeal Court judgment however left one loophole. Chief Justice J. E. Adamson in a written judgment said that had Murphy undertaken to transport grain which he produced in Manitoba for his own use in British Columbia it was a question whether the prohibition would apply.

The real fight is of course between the Winnipeg Grain Exchange with its open market system, and the Canadian Wheat Board through which western farmers must market their wheat, oats and barley.

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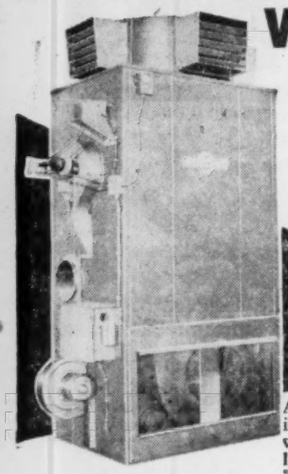

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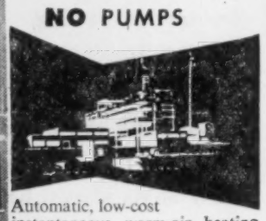

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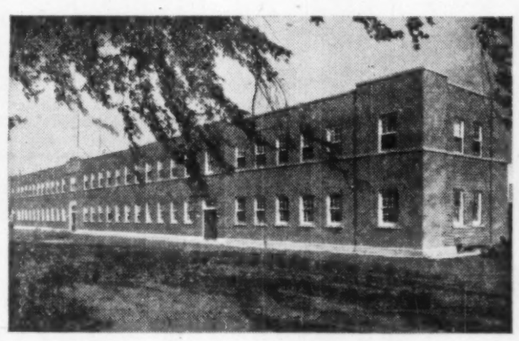
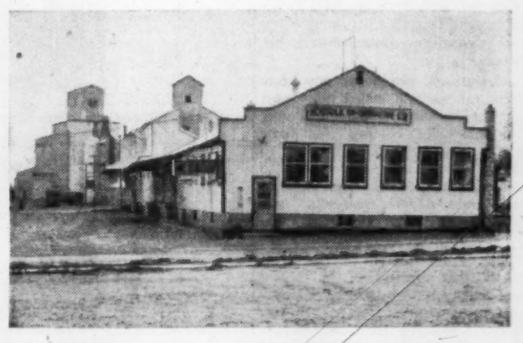
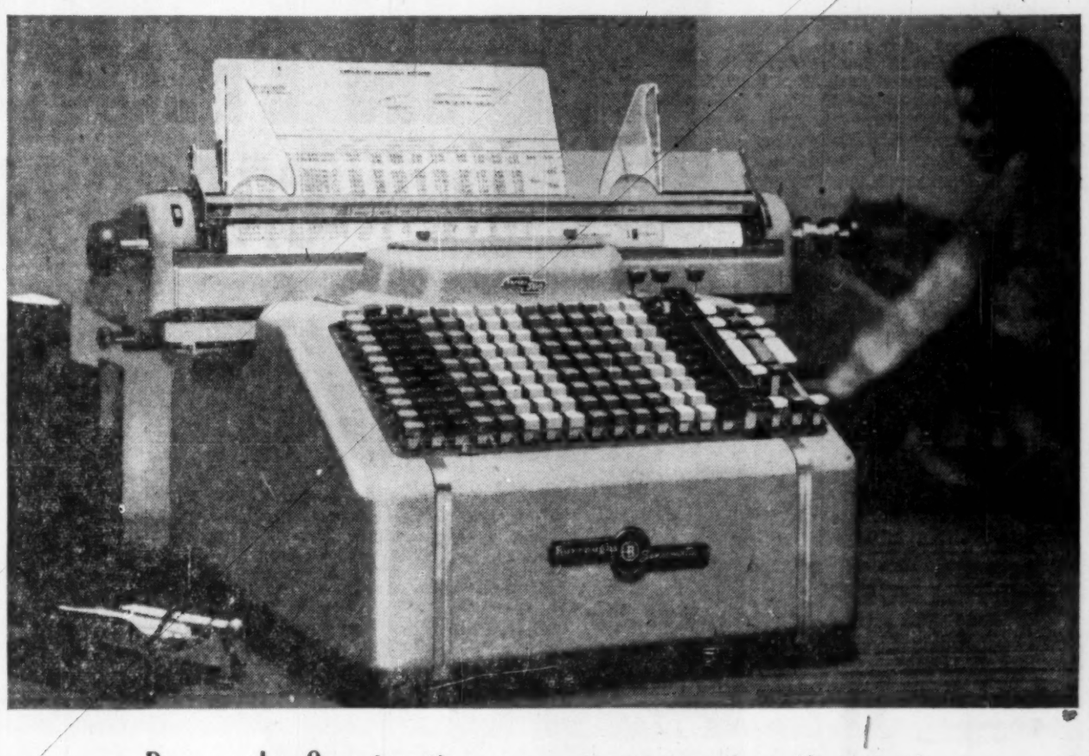


Big—like Aerovox Canada, Limited



Or growing—like Norfolk Co-operative



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Defense Spending is Lower For New Equipment in 1956

OTTAWA (Staff) — Canada's defense forces will reduce their spending on new equipment this fiscal year, and hold the line on construction expenditures.

The white paper, or annual report, of Defense Department shows a $127.5 million reduction in the total to be spent on procurement of defense equipment during the year ending next March 31. Total will be $532,588,000, compared with $660,174,000 in 1955-56.

Biggest drop, $90 millions, will be in purchases of aircraft and equipment. Production of both the CF-100 and F-86 aircraft is being maintained at last year's reduced rate.

Total spending for equipment procurement for the RCAF in the current year is estimated at $256,910,000 ($353,915,000 in 1955-56), for the navy $138,717,000 ($150,950,000) and for the army $78,831,000 ($107,526,000).

The navy undertook no major new ship construction last year, nor will any be initiated this year. The army plans no significant new armament procurement or production programs, and spending on tanks and other armored vehicles is slashed by about 90%.

The armed forces will spend an estimated $145,931,000 on new construction, not including the Mid-Canada line. This is an increase of $633,000 over last year's expenditures.

Spending by the navy is reduced to $11.2 million ($14 million last year), and by the RCAF to $56.9 ($57.1) million. The army, pushing its giant Camp Gagetown program to completion, is increasing its spending from $69.5 million to $72.7 million.

Estimate for mutual aid is being cut to $142 million this year, from $175 million in 1955-56. This, says the white paper, is principally because less equipment will be available from service stocks for transfer to NATO countries.

Estimate for Mid-Canada line construction costs this year is $100 million. Last year, $46,327,000 was spent on the warning line along the 55th parallel, being built under the over-all direction of the RCAF and management of Bell Telephone Co.

Newsprint Supply Nearing Demand As Output Rises

MONTREAL (Staff) — There was evidence this week that newsprint supply in North America was at long last moving closer to demand.

This is indicated in the monthly report of the Newsprint Association of Canada for May.

In the first five months this year, position of consumer stocks in the U.S. are virtually unchanged. At the end of December, they amounted to 672,816 tons and at the end of May they totaled 672,759 tons.

In the same period last year, U.S. consumers stocks dropped by about 100,000 tons from 721,594 tons to 620,583 tons. As a result of steadiness over recent months, U.S. consumer stocks are now at a slightly higher level than at the end of May last year.

For the same month, U.S. consumer stocks were up 8.4% at 672,759 tons against 620,583 tons for the like period of 1955. This was equivalent to an increase of three days' supply compared to 34 days' supply last May.

U.S. consumption amounted to 610,621 tons, or 1.9% higher than the 599,216 tons consumed in May, 1955. There was one less Sunday in May this year which accounts for the somewhat lower consumption gain in May this year.

Canadian production in May increased to 550,525 tons against 518,627 tons for the same month the previous year. But output per working day was up only 1.8%. There were a number of reasons for this:

Bowater's Newfoundland Pulp and Paper Mills Ltd. lost production (10%) because of a fire in the powerhouse. Price Bros. were hit for a few days by a strike. At least two or three mills in Canada had machines shut down for improvements.

For the first five months, Canadian output amounted to 2,659,802 tons, up 4.3% from 2,549,186 tons the previous year.

U.S. production was up 10.2% at 149,033 tons against 135,243 tons in the comparative months of May, while for the first five months output was up 15% at 706,249 tons against 614,007 tons.

Although U.S. imports from Europe are a small amount of supply, they advanced 65.5% on the month at 20,300 tons against 12,266 tons and in the first five months were up 70.6% at 83,105 tons against 48,726 tons. This reflected marginal production which was sold for high spot price in the U.S.

N.B. Premier Again Proposes Atlantic Provinces Meeting

FREDERICTON — Premier Hugh John Flemming launched his second term of office in New Brunswick with another call on the other Atlantic premiers to take the initiative in the redevelopment of the four eastern seaboard provinces.

He followed up the re-election of his government this week with the following telegram to the premiers of Nova Scotia, Prince Edward Island and Newfoundland:

"May I cordially reaffirm my invitation of April 29 last on behalf of the Government of New Brunswick for a meeting of the premiers of the four Atlantic provinces to be convened in Fredericton on Monday, July 2 next or at earliest date mutually convenient. Would further suggest that such a conference should include officials of four governments and representatives of Atlantic Provinces Economic Council holding preliminary discussions."

His first invitation was in reply to a statement made by Prime Minister St. Laurent in an address to the Canadian Labor Congress at Toronto.

Mr. Flemming said the prime minister's statement constituted an unprecedented challenge, invitation and opportunity for governments and people of the Atlantic provinces to take the initiative in the redevelopment of their respective areas.

Mr. St. Laurent, he said, had put himself on record as suggesting that some definite action could be taken, and the proposed Fredericton conference would give the Atlantic provinces a chance to speak with one voice to Ottawa. By pooling ideas, "we will accomplish so much more through co-operation and would be one voice crying out in the wilderness instead of four voices."

Nova Scotia Premier Hicks in his reply to the first invitation had indicated interest, Mr. Flemming said. Premier Smallwood had acknowledged receipt while Premier Matheson had not replied directly.

Government Acts To Speed Work On Small Projects

OTTAWA (Staff) — A government proposal to simplify the administration of the Navigable Waters Protection Act this week sent the Social Credit group in Parliament back into its opposition role.

An amendment to the Act, which passed second reading, would extend the scope of construction which may be made in navigable waters without approval of the Federal Cabinet.

Opposition members were joined by Social Credit—which has frequently supported the Government—in criticizing the amendment for placing too much authority in the minister's hands. Other cabinet ministers might have an equal responsibility in approving or rejecting structures that would affect navigable waters.

At present, plans for any construction except small wharves, groynes, beach protection works or boathouses costing less than $1,000 must be submitted to Cabinet and advertised in the Canada Gazette. In the case of the under-$1,000 projects, approval may be given by the Public Works Minister alone.

The amendment to the Act raises this limitation to $5,000 and extends ministerial discretion to all works except bridges, dams, booms, or causeways. These, regardless of cost, will still require approval by Cabinet.

Public Works Minister Winters said that the present Act leads to long delays in obtaining cabinet approval. If a structure is started without approval, there is no legal way in which it can be approved later. The Cabinet was asked to pass on some 300 plans for construction projects last year, many of them minor and some urgent.

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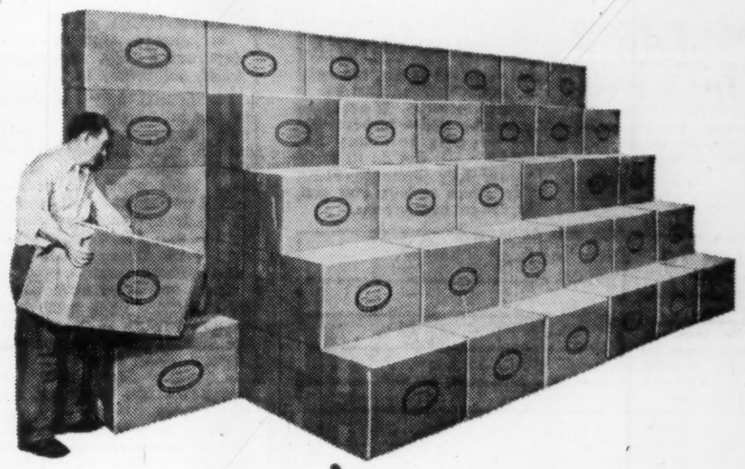

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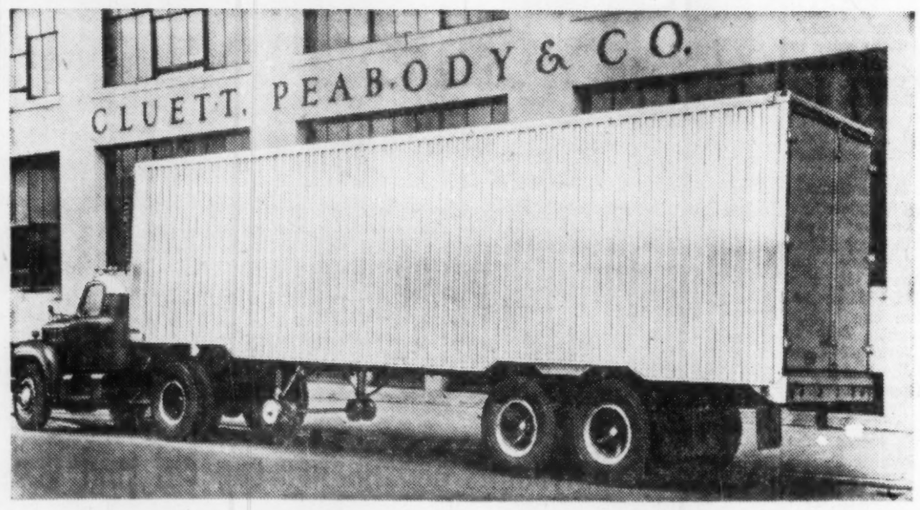

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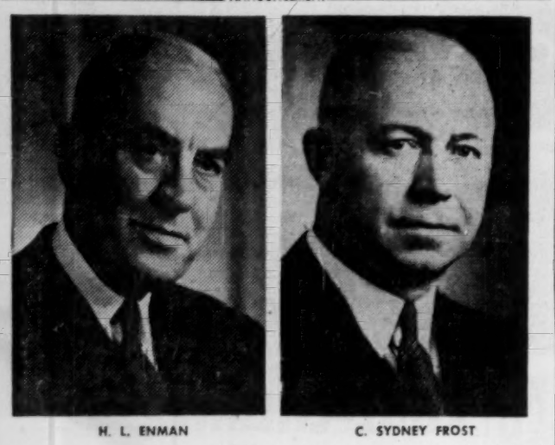

H. L. ENMAN C. SYDNEY FROST

At a recent meeting of the Board of Directors of The Bank of Nova Scotia, Mr. H. L. Enman, Chairman of the Board retired as President of the Bank. He is succeeded as President by Mr. C. Sydney Frost who has been Executive Vice-President of the Bank since December 1st, 1954. Mr. Enman will continue as Chairman of the Board.

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Mount Allison Summer Institute

Walter B. Herbert, director of the Canada Foundation, will be theme lecturer at the second annual summer institute at Mount Allison Universtiy, Aug. 9-11. Topic of the sessions will be "The Arts in Canada."

Other speakers expected include Sir Ernest MacMillan, Public Works Minister Robert H. Winters and Michael Langham of the Stratford Shakespearean Festival Foundation.

Mr. Herbert will lecture on the current state of Canadian arts, improvements that can be made and the financing of arts in Canada. Each of his three lectures will be followed by a round-table discussion.

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LABOR AND THE LAW

Workers Won't Pay Fines For Failure to Punch In

Significant judicial, grievance and administrative decisions in the labor field are reviewed in this regular Post feature. Principles basic to industrial relations, unemployment insurance and labor law are highlighted. Here is another case:

The radio station sent memos to its staff, saying:

"It has become evident that several staff members do not realize the importance of punching in and out as they report for and leave their tour of duty.

"Therefore . . . a fine of 50c will be imposed on each person who fails to punch in or out without a legitimate excuse. This fine will be levied on each occasion. It will apply to lunch periods and breaks between shifts.

"If this action fails to rectify the situation the fines will be increased."

Later four staffers were fined, one being assessed $20.

The Union (National Association of Broadcast Employees and Technicians) backed them in carrying the issue to a grievance board.

The Union argued:

There is nothing in the collective bargaining contract giving the radio station the right to levy fines (The Union conceded the men gave cause for disciplinary action).

There is nothing in the rights of management which allows fines to be imposed. Therefore, such penalties are improper and arbitrary.

The company argued:

Employees have obligations under the contract to work certain hours. They must live up to them. Imposition of fines for being late is a legitimate management method of ensuring that such obligations are met. Fines are a common practice in radio stations.

The arbitrator ruled:

"The question is essentially a question of law. Has the company a right to impose a fine in the absence of a specific agreement to that effect in the contract?

"The answer is no, not if those fined refuse to submit to fines.

"It is common knowledge that employers are cautious about making deductions from an employee's pay without his authorization or without some understanding that certain deductions are to be made as a condition of employment.

"In other words the entire amount of an employee's pay is his own particular property . . .

"There is another aspect. A fine is a peculiar sort of penalty. The imposition and collection of a fine from an unwilling offender is a peculiar prerogative of the state."

(Note: In certain other cases, management rights clauses in labor contracts were held to give the company the right to impose reasonable penalties for failure to punch timecards. The radio station's labeling of the penalty as a fine may have been a mistake. Obviously it's best to cover specifically such matters in the contract).

Source: Labor Arbitration Cases published for the Central Ontario Industrial Relations Institute by Cartwright & Sons, Toronto, 30-4-56, P. 125.

Reasons Why OSC Refused Registration Second Time

Here is the full text of the decision of the Ontario Securities Commission in refusing for a second time to grant registration as a broker-dealer to Larrimore Securities (FP, June 16). This second hearing followed an appeal by Larrimore Securities to the Chief Justice of Ontario.

Larrimore Securities Limited — H. J. Keenan:—On Dec. 20, 1955, the Commission refused Larrimore Securities Ltd. registration as a broker-dealer following the refusal of the Broker-Dealers' Association to grant the applicant membership in the Association. An appeal was taken from the ruling of the Commission under the provisions of Section 30 of the Act, and the Chief Justice of Ontario referred the application back to the Commission for further consideration.

On the re-hearing it appeared that the logical procedure was to ascertain whether the applicant had the necessary free working capital and identify the true source of the capital, if possible, before delving too deeply into his earlier record. The importance of this was further emphasized by a claim being made that Keenan had disposed of a half interest in Larrimore as evidenced by a cheque dated Jan. 10, 1956 for $150 payable to Keenan and bearing this notation — "½ interest in appeal" meaning the appeal then pending under section 30. The claimant further submitted that there was an oral agreement to the effect that he was to invest $5,000 and in return was to receive a half interest in Larrimore.

It is difficult to accept this story in its entirety even in the face of Keenan's failure to admit or deny whether he received the cheque bearing this notation, or whether it was noted after the cheque had been cashed.

But Keenan's failure to take any action following the receipt of a letter from the claimant's solicitor, further demonstrates an indifference and lack of judgment which we have observed throughout.

Keenan testified that in order to raise the necessary working capital a second mortgage was placed on his home in June or July of 1955. He spoke in terms of a $10,000 mortgage, but later it was disclosed that only $5,000 was advanced, which was sufficient to meet the requirements as to free working capital. He further explained that he had paid the mortgage off with a cheque issued by Larrimore Securities Ltd., but that the mortgagee would again advance the necessary funds if he required them.

When pressed to state when this mortgage was paid off, he answered —"It was a month after the hearing (meaning the hearing before the Commission in December, 1955) approximately, I cannot remember the exact date."

Keenan as a former registrant fully appreciated the significance of this evidence. If he had spoken the truth, it would have been disclosed that his working capital had been fully depleted at the time of the first hearing in Dec., 1955. He was requested to produce the cheque which was produced when the hearing was resumed on May 30, covering a payment made on Sept 7, 1955.

He could not explain nor produce a statement showing how the amount was made up, indicating careless business methods at least, or possibly that he had no actual control over the funds in question.

Keenan could not have been honestly mistaken as to whether he depleted his capital before or after the first hearing.

The Broker-Dealers' Association refused Larrimore membership in the Association by a letter dated Aug. 24, 1955, and his entire capital was paid back, or taken back, 15 days afterwards. He deliberately gave false evidence in connection with a most material consideration, evidently in the hope that his evidence would be accepted without further question.

We have referred to the evidence as most material, as since the date of the payment is fixed, it is established that when Larrimore's application form, verified by Keenan's affidavit, sworn on Sept. 29, 1955, was filed and accepted in form by the Commission after several applications had been returned for corrections, Larrimore in fact did not have a single dollar of working capital.

Under clause 11 of the application form Keenan is shown as the holder of 7,501 shares and no reference is made to "any obligations outstanding" as required. The information supplied therefore indicates that since Larrimore had satisfied the Broker-Dealers' Association as to free working capital, Keenan had subscribed and paid for 5,000 shares at least with a par value of $1.00, and the balance of 2,501 shares may have represented shares issued for goodwill.

Technically the statement, verified by affidavit, is not false, as the shares in question had been issued as paid, free from any outstanding obligations, but from an administrative standpoint in considering the fitness of a former registrant fully conversant with the considerations involved, it represents an entirely false position which should be accepted as conclusive evidence that Keenan is not entitled to registration.

He knew that he is required to maintain free working capital throughout his operations, that his application in the case of a dormant company which can only become active when registration is actually granted, is supposed to and must necessarily reflect the capital position as disclosed in the application form without impairment. He explains his position by stating that the mortgagee was willing and is still willing to make the necessary advances at any time. In fact a letter from the mortgagee, or possibly the nominee of the actual mortgagee to this effect is filed as an exhibit.

In considering the application for the second time by a person who is seeking a double privilege, first to be licensed to trade in securities as a principal, and the further and special privilege of being allowed to trade free from the control and supervision of any branch of the organized securities industry, which plays such a practical and important part in the over-all problems of administration, we are confronted with indisputable evidence that the applicant's relations with the Commission even respecting routine requirements, were false, that without hesitation he offered false and misleading evidence in an attempt to mislead the Commission.

If in fact he had depleted his capital as represented after the first hearing, when he had temporarily abandoned all hope of obtaining registration, no objection could be taken.

These two clear-cut examples which appear to be truly indicative of Keenan's attitude as we had observed him during two hearings, demonstrate that he will without hesitation employ any means which may serve his purpose.

These examples of his lack of good faith should also be considered against evidence which although not conclusive, indicates careless and indifferent methods both regarding money matters and his own reputation.

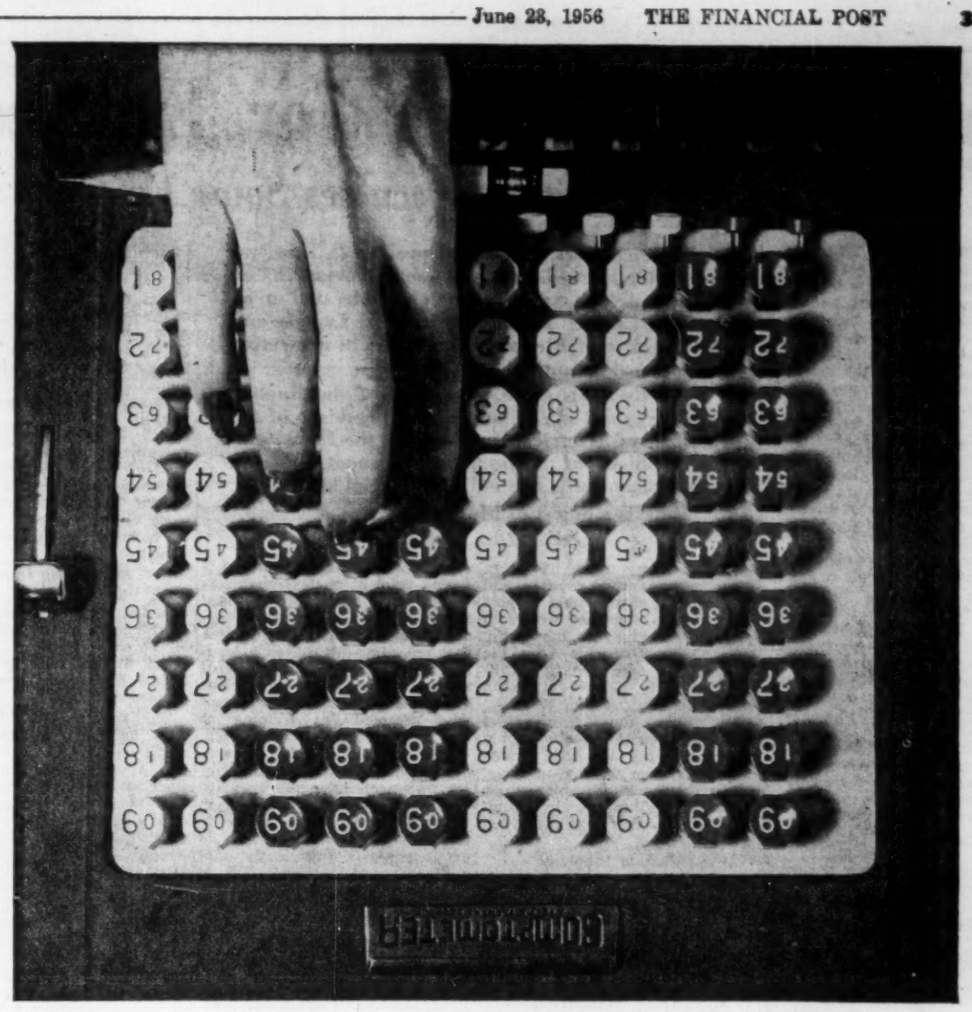
He evidently lacks stability, with the result that at any time his business may be placed in a precarious financial position. For these reasons and giving false testimony and supplying misleading information respecting routine requirements are most cogent reasons, the Commission is unable to accept the responsibility of granting Larrimore Securities registration as a broker-dealer.

Moreover, the Commission recognizes as submitted by its counsel that the considerations presently before us differ materially from those before the Chairman in 1950 when Keenan was under investigation. Revoking an existing registration disrupts the public financing of ventures and causes confusion and inconvenience. In this instance these considerations are not applicable. There are no collateral considerations involved.

The Commission could not now properly disregard the results of the 1950 investigation unless we were fully satisfied that Keenan had undergone a complete change of heart in the meantime.

It is obviously impossible to reach such a favorable conclusion on the strength of the evidence before us.

The application of Larrimore Securities Limited for registration as a broker-dealer is again refused.



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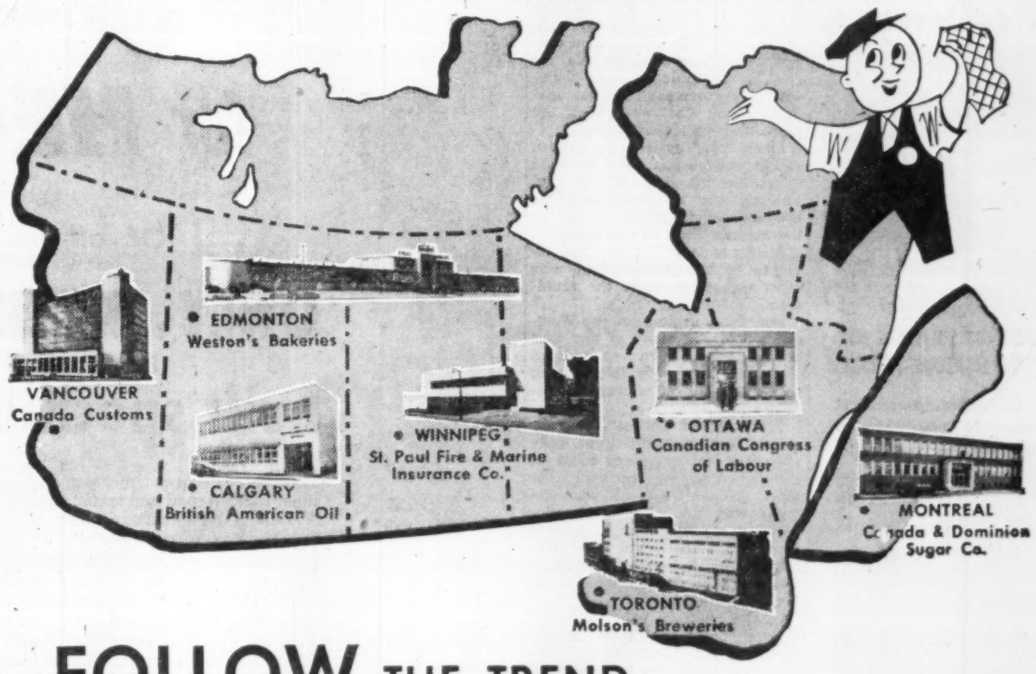

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The World Scramble For Engineers

Head of U. K. Institute Discusses Some Factors

Do engineers lack social prestige? That was one factor blamed for the present shortage by an eminent British engineer when he addressed members of the Engineering Institute of Canada and the Institute of Electrical Engineers at a meeting in Montreal recently.

Sir George Nelson, chairman of the English Electric group of companies, and president of the Institute of Electrical Engineers in the U. K., said the problem of adequate recruitment to meet present-day needs had a distinct social aspect.

Here is a digest of his speech:

By SIR GEORGE NELSON

The development of Canada has involved close association between civil, mechanical and electrical engineers who today work in the closest collaboration for the benefit of all concerned. This association between the branches of engineering penetrates into all forms of scientific activity.

It is interesting to note that a journal on organic chemistry or psychology for example refers constantly to new electrical or mathematical techniques and this shows how all fields of scientific activity and thought impinge on each other.

In Great Britain we are always faced with the difficult economic situation of having to import food to feed one half of our people and having to import practically all of the raw materials necessary for our industry. In order to pay for these imports we need to export at a high rate. We are also compelled through research and development to search for new methods of replacing materials in short supply.

This situation has forced us to give much more thought to the use for peaceful purposes of nuclear energy than has been done in any other country and our progress in this field is most encouraging comparing well with any other country in the world.

In October of this year the Queen will open the first full-scale nuclear power station in the world. This station at Calder Hall contains four 23-mw. turbo alternators which will supply electricity into the grid transmission system on a commercial basis. The Nuclear Reactor which is to provide the heat was actually brought into operation last week.

Threefold Problems

Britain, like all the countries of the free world, is suffering from a growing shortage of technical manpower to meet the needs of industry. The problems to be solved are threefold:

—To recruit sufficient men into science and engineering.

—To provide adequate education and training for those recruits—and particularly sufficient teachers.

—To obtain immediate relief by making the most efficient use of the trained manpower available now.

The proper organization and control of recruitment are particularly difficult problems. The spectacle of Government research, service and supply departments and large companies all desperately competing for staff by large-scale advertising and extravagant inducements is extremely disturbing as well as being inefficient and unsatisfactory in its results.

Even American and Canadian firms have come to Britain or sent their scouts out to join in the scramble for staff. Some people are making a profitable business of running employment agencies for senior staff particularly on behalf of North American companies. More and more people I find are realizing that the excessive competition for staff is bad and that we must find improved ways of increasing the total pool.

Social Status

The problem of course has a distinct social aspect. In the British Commonwealth and the United States there is still a tendency in some quarters to regard the technologist as on somewhat lower terms of professional status than what are called the humanistic professions.

From long custom in Britain social prestige has attached more to professions such as the civil servant, the army officer, the lawyer and to those trained in the classics than to the engineer.

In America social prestige attaches to the businessman who buys and sells and to the financier.

For these reasons in the Western world too many of our best brains have been encouraged at an early age to follow such careers instead of science and engineering.

I mentioned earlier that our efforts to recruit and train more scientists and engineers must be supplemented by ensuring the most efficient use of technical manpower. A significant contribution to this end has been made in recent years in Britain by the Institution of Electrical Engineers in developing courses for technicians.

In the past the range of posts between those suitable for craftsmen and those suitable for professional engineers — posts in planning and contracts offices, inspection and routine design and so forth — were too often filled by upgraded craftsmen or men who had tried to become professional engineers but failed to make the grade. In other words, men whose training had not been specifically directed toward the sort of job they were destined to fill.

Now we want the technicians to be recognized as an integral part of the system and courses to train boys and young men for this type of post are being introduced.

Nuclear Teams

An important contribution to the conservation of technical manpower has been made by the Central Electricity Authority in the United Kingdom. Realizing the urgent need to develop nuclear energy for power, and realizing that the number of nuclear engineers was very limited, the authority took the bold decision of announcing at an early stage that tenders for nuclear power stations would be requested from only four companies manufacturing heavy electrical equipment.

Each of these was advised to associate itself with a manufacturer of boiler equipment and a civil engineering contractor. We thus have now in the United Kingdom four powerful groups, each of which has built up a strong team of nuclear engineers to deal with this most important field.

You may be interested to note that my company played a leading role in establishing one of these groups and that our nuclear energy team is headed by a man who received his training at Chalk River, Ont.

If it had not been for the wisdom of our Electricity Authority we may well have ten or more separate companies competing in this important field, none of whom would have been able to get together a sufficiently adequate team of key men. Nor do I believe the competition in terms of price or technical excellence would be any greater in those circumstances than it is between the four groups I have mentioned.

Another important factor in easing the shortage of technical personnel has been the introduction of the digital computer. Machines now available will solve in a very short time problems which would otherwise have engaged highly skilled staff for many weeks or even months. Some are also being used on commercial applications such as payroll or inventory problems, but I believe that their most valuable contribution is in the field of design and scientific research where they release high-quality brains for less routine work and speed up the solution of technical calculations to an immense degree.

Minimizing Impact

In all industrial countries mechanization has been increasing for many years, at least 200% in the case of Britain. In recent years, it has extended to materials handling, inspection and process control.

The situation that has developed by the extension of automatic transfer and control methods of handling discrete units such as engineering products is not new in principle but only an extension of what has been done in the past which will bring great benefits to people in the future. Undoubtedly changes in occupation will be required but there is no reason why this should create general instability of employment and such personal inconvenience as may result will be out-weighed by the long-term benefits.

I might mention that when the automobile replaced the horse and carriage the blacksmiths were forced to change their occupation, but today there are far more people working in automobile factories than ever there were on shoeing horses and at far higher wages. In the same way I am convinced that "automation" will benefit all concerned, even the workers who may be temporarily displaced. Indeed if we do not accept the opportunities offered by new processes and scientific discoveries we shall be passed by those countries more willing to take risks.

I have referred to the inconvenience and difficulty which will be suffered by some and we should not lightly dismiss these problems. We cannot hold back advance to avoid these problems but we can and should consider means of minimizing them.

Here is a case where engineers must keep constantly in mind the economic and social implications of their work and where the leaders in industry, in the trade unions and in governments must be kept aware of technological advances so that they can plan ahead to meet them instead of blindly trying to resist them through selfishness or ignorance.

I hope that what I have said so far will indicate to you that Great Britain has no intention of allowing itself to lose the lead which we have achieved in so many fields of technology.

I have mentioned the interrelation between the various sciences and one of the fruits of such interaction has been the introduction of a new diesel electric locomotive using a form of diesel engine originally developed for the Royal Navy for ma-

(Continued on page 35)

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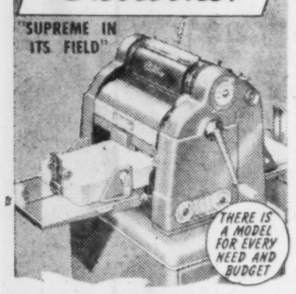

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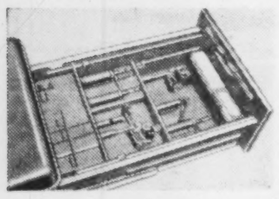

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Oil Industry Oppose Tariff Changes For Canadian Pipe

OTTAWA (Staff) — It was the turn of Canadian pipe and tubing manufacturers to present their arguments for higher protection, a the Tariff Board continued its general inquiry into iron and steel tariffs this week.

The Board, which began its inquiry early this year, will hold its final public hearings in the current series next week in Ottawa. It will reconvene in September for a summing up of the views presented during the past six months.

Submissions this week followed the established pattern — more protection sought by Canadian producers, opposed by their foreign competitors, and by the Canadian Petroleum Association.

The National Plumbing Association suggested that a higher tariff on cast-iron soil pipe was needed. Representatives of British firms selling soil pipe in the Canadian market urged that there be no change, in order not to increase the U. K.'s unfavorable trade balance with Canada.

Canada Iron Foundries and Anthes - Imperial, two major Canadian manufacturers of pressure (water) pipe, warned that completion of the St. Lawrence seaway would permit U. K. exporters to extend their sales of pressure pipe into central Canada, to the detriment of the Canadian industry.

U. K. industry representatives told the Board that although Canadian imports of pressure pipe have been rising, Canadian manufacturers have more than tripled their production of this class of pipe during the past 10 years.

Higher duty on steel tubing and casing, which are forms of pipe used in oil and gas wells, was urged in a lengthy brief presented by Vice-President W. E. Bannerman of Page - Hersey Tubes Ltd.

Here's the Tariff

Tariff item 397A provides for 22½% tariff on pipe with a diameter of 10½ inches or less, but this protection is diluted by the exception of a number of end items. It was suggested that Page - Hersey wished to launch production of these items, if it could have the protection of a 22½% across-the-board tariff.

Duty on such items now ranges from free to 15%. The greater part of Canadian production of pipe and tubing, evidence showed, is already covered by the 22½% tariff.

The Canadian industry has the facilities to produce many of the items now entering Canada at the lower tariff, said Bannerman, but cannot compete with foreign producers under the existing tariff situation.

"It is foreign countries such as the U. S., Germany and Japan who are reaping the benefit of increased Canadian consumption," he said.

Opposing Brief

The Canadian Petroleum Association which also submitted a brief which claimed that suggested tariff revisions would result in substantial boost in over-all costs to Canadian oil producers.

In its brief, the Association points out that the petroleum industry in Canada currently is spending about $1 million daily on Canadian manufactured goods, purchasing domestic products whenever and wherever possible. However, the Association says, the Canadian-made welded pipe, despite claims of its makers to the contrary, is not of sufficiently high standard for specific petroleum drilling needs.

An import tariff of 22½%, being asked for by the Canadian steel manufacturers, would result in an average increase in cost of $3,200 per well drilled, and would represent an increase of costs of about $10 million in one field alone, the Association states. This would tend to discourage exploration and would endanger Canada's competitive position on the world oil market, it is said.

The Association submission goes on to explain that in Alberta, use of welded pipe is not permitted by the Conservation Board where high pressures and corrosive factors are encountered.

In such cases, seamless pipe of a type not manufactured in Canada must be used. The Association brief regrets the pipe manufacturers' proposal that they are asking, at a time when they are still unable to fulfill the country's needs, protection for their industry at the expense of Canada's oil market which is just becoming established.

The Page-Hersey brief is not asking for any increase in basic rates on tariff items but is asking Ottawa's consideration on tariff items which allow imports of pipe and tubing at rates lower than basic rates, or free of duty. Involved are tariffs on a range of oil well tubing and casing.

Imperial Oil Will Spend $4 Million

Imperial Oil will spend an additional $4 million on gasoline-making equipment at its Ioco refinery at Vancouver. The new equipment will produce the higher-octane gasolines, required of the higher compression auto engines now being developed.

Tenders have been called for construction of a special catalytic reformer called a powerformer. A prefractionator and a hydrofiner, units which control the quality of the feed stock for a powerformer, are to be included in the contract.

Other new installations not included in the main contract will be storage tanks, piping, fire protection equipment, roads and special equipment for handling the catalyst. The new units should be ready to go on stream by the summer of 1957. The powerformers will have a daily capacity of some 5,000 barrels.

It will use platinum as a catalyst to assist in altering the structure of the gasoline molecules so that they will resist knocking in high-compression engines.

Refinery's daily capacity of 23,000 bbls. of crude oil, will not be altered.

Imperial Starts Oil Wildcat First In Quebec

Lowlands Exploration Co., Imperial Oil subsidiary, will begin immediately its first "wildcat" well in the St. Lawrence lowlands. The well is located 1½ miles southeast of the village of Leclercville, Que., on the south side of the St. Lawrence River, about 40 miles down stream from Three Rivers.

The Imperial subsidiary has drilled a number of shallow holes over a large part of the 600,000 acres — permit held from the Quebec Government. But these holes have been in search of geological information only. Although extensive geological and geophysical studies have been carried out over past two years on the Quebec acreage this will be the first actual "drilling-for-oil" project.

Shell To Build $3 Million Addition To Chemical Plant

Shell Oil Co. of Canada will take another major step into the fast developing petrochemical field in this country. Engineering and design work are under way and construction will start shortly on a plant to produce detergent alkylate (dodecyl benzene), the main ingredient of household detergent powders.

The new facilities will be located adjacent to Shell's existing petrochemical plant which was built in 1953 at Montreal East. It was the first in Canada to produce isopropyl alcohol and acetone from petroleum.

The facilities for manufacturing dodecyl benzene will comprise one section of a new $3-million plant. Another important section will be devoted to production of components for high octane gasoline.

"This dual plant was conceived by our own engineers in Canada," says Shell Oil President W. M. V. Ash. "A real achievement by Canadian engineering talent."

Main raw material for the process will be byproduct gases from Shell's nearby Montreal East refinery. The new plant will go into production in mid-1957.

In the last few years Shell has taken several important steps in the petrochemical industry. In 1951 it built a sulphur plant at Jumping Pound field in Alberta; in 1953 a plant at Montreal East to process isopropyl alcohol and acetone; expansion of Jumping Pound sulphur plant in 1954; Montreal East plant for production of secondary butyl alcohol and methyl ethyl ketone in 1955.

Croinor Pershing Drilling For Oil

Croinor Pershing Mines Ltd., former gold producer in Quebec, has let a contract for drilling for oil and gas on its holdings in the St. Lawrence Lowlands.

The drilling will test some 830 acres which the company acquired east of Nicolet and south of Pointe du Lac. The property is in the Seigniory of Godfroy Roquetaillarde and located in the centre of the Imperial Oil special permit zone.

Imperial Oil which holds 600,000 acres under permit this week announced first wildcat drilling venture some 40 miles downstream from Three Rivers.

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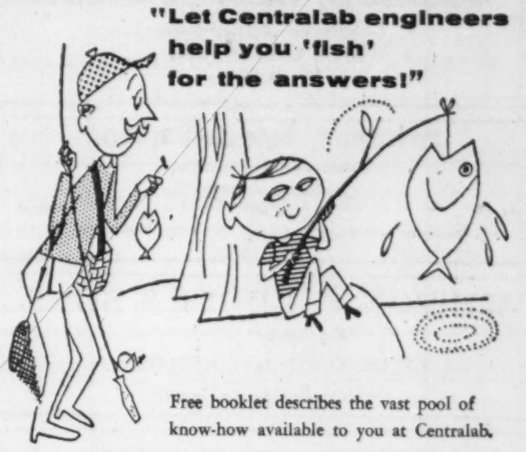

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ANNOUNCEMENT

A. L. Mitchell — Westcott W. Cherry — Charles W. Tomlinson — Frank A. Barnes

David H. Ross, President and General Manager of Gair Company Canada Limited, announces the following organizational changes which will allow the Company to provide greater specialized services in its many diversified fields.

Mr. A. L. Mitchell, in addition to duties as Vice-President, will be Sales Consultant to the President.

Mr. Westcott W. Cherry, General Sales Manager of Corrugated Shipping Container Divisions.

Mr. Charles W. Tomlinson, General Sales Manager of Folding Carton Divisions.

Mr. Frank A. Barnes, General Sales Manager of Paper Specialty Divisions.

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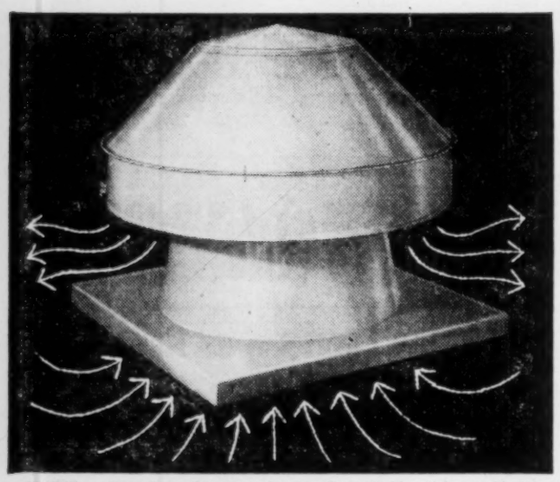

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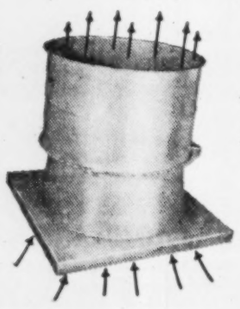

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Scramble For Engineers

(Continued from page 34)

rine application. This is the most powerful single loco in the world with the remarkably low weight of 72 lb. per hp.

Largest Telescope

In the field of electric power plant although there is no startling new discovery to announce, there is a constant advance in standards of performance and reliability, and the fact that the United Kingdom is the greatest exporter of electrical power equipment speaks for itself.

In the field of fundamental science we are equally active and I would mention, for example, the imminent completion of the largest steerable radio-telescope in the world at Jodrell Bank. This remarkable instrument will probe the outer confines of space and provide information about galaxies 1,000 million light years away and it will also provide practical information on radio communication problems.

Now I want to look at the prospects for the future. I am sure that civil and mechanical engineers will not object to my placing electricity at the centre of any such picture.

This is not to claim any superior part for electrical engineers. Fuel, whether coal, oil, uranium or any other, has to be mined and transported to the stations or rivers have to be dammed so that the production of electricity demands the skill of all types of engineers. In the same way the use of electric power to drive industries or railways or to bring amenities to the homes requires the activities of all sorts of technologists.

We are faced with two parallel trends today. World population is rising rapidly—about 20 million per annum at the present time. I have quoted estimates that gave the world population as 1,100 million in 1850, 2,400 million in 1950 and 6,000 million in 2050.

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J. E. TAYLOR, manager, Prince Rupert, B.C., to be manager, Saskatoon, Sask.

T. FOSTER, manager, Red Deer, Alta., to be manager, Kirkland Lake, Ont.

J. E. LEWIS, Hamilton, Ont., to be manager, Gage and Mohawk, Hamilton, Ont.

L. M. PATON, assistant manager, Lethbridge, Alta., to be manager, High River, Alta.

J. J. SPROUT, accountant, Beausejour, Man., to be manager, Qu'Appelle, Sask.

W. J. YULE, manager, High River, Alta., to be manager, Red Deer, Alta.

J. T. CONLIN, manager, Qu'Appelle, Sask., to be manager, Lemberg, Sask.

J. W. HOUGH, manager, Lemberg, Sask. to be manager, Abbey, Sask.

W. H. JOHNSON, manager, Redwater, Alta., to be assistant manager, Lethbridge, Alta.

W. B. AITKENHEAD, Portage & College, St. James, Man., to be accountant, The Pas, Man.

D. H. HORN, acting manager, Hinton, Alta., to be accountant, 118th and 124th, Edmonton.

M. A. PETRIE, appointed accountant at Kimberley, B.C.

J. R. WEBB, Prince Rupert, B.C., to be accountant, Dunbar and 17th, Vancouver.

G. H. BRADSHAW, accountant, The Pas, Man., to be accountant, Beausejour, Man.

J. E. J. RAINVILLE, Richibucto, N.B., to be accountant, Chibougamau, Que.

N. C. BRADSHAW, accountant, Dunbar and 17th, Vancouver, to be accountant, North Vancouver.

* * *

Commerce:

A. E. BRUCE, to be an assistant cashier, San Francisco, Calif.

G. C. DELGATY, an audit officer, regional office, Winnipeg, to be an assistant manager, Winnipeg.

R. W. DICKEY, to be assistant accountant, St. John's, Nfld.

R. J. ERWOOD, to be an assistant accountant, International Branch, Toronto.

O. M. J. FAGAN, manager, Exmouth St. and Colborne Rd., Sarnia, Ont., to be an assistant inspector, Regional Office, Toronto.

W. E. GRAY, an assistant accountant, Portage and Garry, Winnipeg, to be accountant, Port Arthur, Ont.

B. A. HEWETT, assistant accountant, St. Johns, Que., to be accountant, Rouyn, Que.

C. H. JAMES, an assistant chief accountant, head office, Toronto.

G. J. JOHNSTON, manager, Alberton, P.E.I., to be manager, Glace Bay, N.S.

A. T. KERR, an assistant inspector, regional inspection department, Toronto, to be manager, Ottawa.

J. V. A. LECLERC, assistant accountant, Trois-Rivieres, Que., to be accountant, Trois-Rivieres, Que.

A. A. MAILO, to be accountant, St. Paul, Alta.

S. PRATTE, to be assistant accountant, St. Johns, Que.

M. RYLES, accountant at Port Arthur, Ont., to be accountant, Winnipeg.

A. L. TIBBITTS, accountant, Moncton, N.B., to be manager, Alberton, P.E.I.

K. E. WATSON, to be an assistant accountant, Montreal, Que.

A. WHATLEY, to be accountant, Moncton, N.B.

H. H. WHIPP, chief accountant, head office, to be comptroller, head office, Toronto.

H. A. YOUNG, to be an assistant accountant, Portage and Garry, Winnipeg.

* * *

Nova Scotia:

F. W. ROBINSON, to be inspector, supervisor's office, Vancouver.

W. S. BENT, to be manager, Gagetown.

J. H. FRASER, an assistant manager, Ottawa, to be manager, Parkdale, Hamilton, Ont.

W. F. HODGSON, an assistant manager, Queen and McCaul, Toronto, to be manager, Danforth and Balford, Toronto.

F. A. RODRIGUEZ, accountant, Ciudad Trujillo, D.R., to be manager, Santiago de los Caballeros, D.R.

V. G. HOWATT, assistant manager, Charlottetown, P.E.I., to be assistant manager, St. Catherine and Peel, Montreal.

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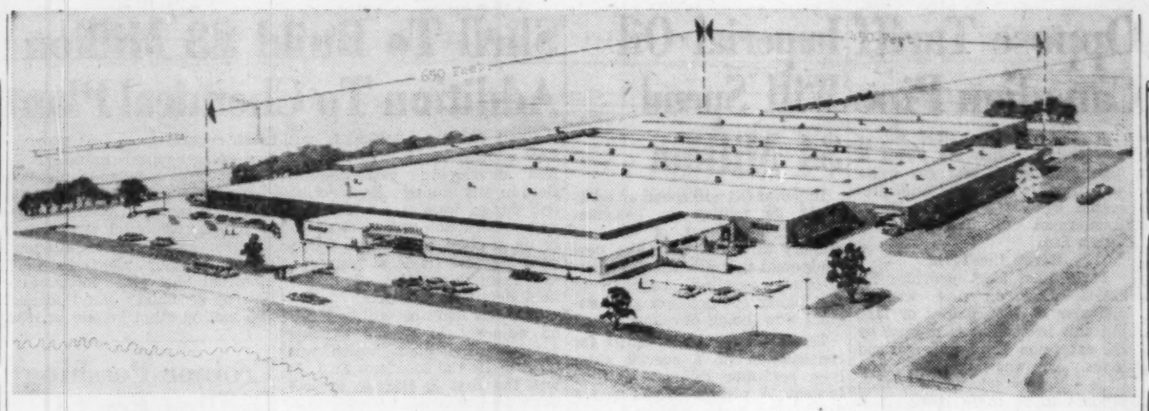


THIS MAMMOTH WINNIPEG warehouse of Marshall-Wells is the stockroom for some 200 hardware stores.

This Hardware 'Shop' Handles 39,000 Lines—Tools To Toys

Here's how Marshall-Wells is streamlining its distribution in Western Canada, with a warehouse so big that motor scooters whiz from department to department.

Into the farms, mines, ranches and lumber camps of Western Canada flows just about everything that can be called hardware. This week the flow speeded up.

Marshall-Wells Canadian Companies, whose hardware sales topped $43 million last year, officially opened their new 7½-acre, $1.4-million warehouse in Winnipeg.

It is designed to handle hardware ranging from tools and toys to steel bars and sporting goods.

The company's general catalogue illustrates and describes 39,000 different lines. In Western Canada today there are close to 200 Marshall-Wells stores. The Winnipeg branch employs about 250 people.

Here are some of the features that have gone into a warehouse designed to operate on such a scale:

—A 28-ft. long mural just inside the front doors. Against the background of Western Canada, its theme is merchandise distribution.

—Soundproof ceilings of woven steel and fibre glass, that can be taken down panel by panel for cleaning.

—Fluorescent lighting and complete air conditioning.

—An intercommunication system with automatic switchboard and a central dictating scheme.

—A continuous belt for order processing.

—Motor scooters for fast warehouse pick-up.

Customer Service

Dealers calling at the warehouse will find a streamlined customer service department. It starts in the 100-car parking space and ends with electronically controlled doors for the outgoing trucks.

The warehouse receiving area has enclosed trackage for 10 freight cars and a truck unloading area for 10 semi-trailer trucks. Merchandise is moved by fork lift trucks and tractor trains to warehouse areas. Mechanization has cut the unloading time for a freight car from days to hours.

Numbering and stock control systems enable orders to be filled with the least delay. In every department, bins and warehouse locations are marked, numbered and laid out in numerical order and alphabetical sequence in accordance with the company's catalogue.

No less than 10 miles of slotted angle have been used for bin construction, tire racks and warehouse tables.

The flow of operation moves through the warehouse to the packing area, and then by electronically controlled conveyor system to the shipping area. The enclosed shipping area covers some 20,000 sq. ft. and accommodates 16 semi-trailer vans and tractor trucks.

Formed in Duluth

As a company, Marshall-Wells was formed in Duluth, Minn., in 1893. The first Canadian operation was started in Winnipeg in 1901, and in the next 12 years pushed west to the Pacific coast.

Besides its warehouses, Marshall-Wells operates four factories. Two are in Duluth and the other two are the Canadian subsidiaries, International Laboratories, St. Boniface, Man., producing paints, and Marmac Oil Co., producing lubricants.

English-born Reginald A. Hobday is president of Marshall-Wells Canadian Companies. He joined the firm as a pricer in 1919, transferred to the sales staff the next year and initiated sales promotion in the Winnipeg branch in 1926. He became sales manager, 1939, head office manager of Marshall-Wells stores, 1945, vice-president and managing director, 1947 and president in 1955.

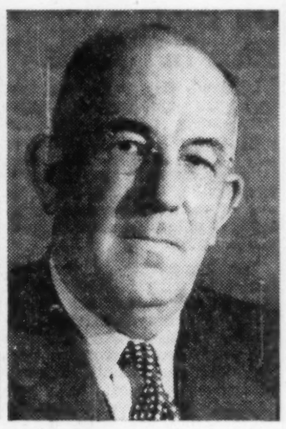
Hobday has been nine years on the executive of the Winnipeg Chamber of Commerce, the last three as senior vice-president. He is a member of the provincial government's Business Advisory Council and also of the Institute of International Affairs.

Vice-president and managing director of Marshall-Wells, Winnipeg, is George Tetlow, also English born. He was with J. H. Ashdown Hardware Co., Saskatoon, from 1911 to 1923. For the next 16 years he was a salesman for Wood Vallance, Regina, then acted as assistant sales manager in the Regina office and became sales manager in 1949.

He transferred to the Winnipeg branch as sales manager in 1949, and back to Regina as manager in 1952. In March, 1956, he transferred to Winnipeg for his present post with Marshall-Wells.

The company's Canadian operations matches Marshall-Wells sales in volume in the U. S., where last year's net sales, at $44 million, were only $1 million more than in Canada.

R. A. HOBDAY, president, Marshall-Wells Canadian Companies.



GEORGE TETLOW, vice-president and managing director, Marshall Wells Co.

Computing Devices Unveils New Plant, Air Tests Unit

OTTAWA (Staff) — A newly developed aerial camera and testing unit was unveiled at the formal opening of the new plant of Computing Devices of Canada Ltd. near here.

The unit is designed for use on a CF-100 jet, and is concealed in a wing-tip fuel tank. Instead of fuel, the tank carries electronic instruments and cameras for testing weapons and components. The tank's streamlined nose has been cut off and replaced by a flat piece of glass for an aerial camera.

Known as a UIP or Universal Instrumentation Package, the tank can be switched readily from one aircraft to another. Ordinarily, a jet would have to be held out of service for up to six months to equip it with weapon-testing instruments.

The company's 82,000 sq. ft. plant at Bells Corners was formally opened last week, although it has been in operation since last fall. Construction on an addition will get under way this fall, and by next spring the plant's size will have doubled.

Founded in 1948, CDC specializes in "avionics," with much of its work consisting of classified defense projects for the Canadian Government.

It recently made public a push-button navigation aid which frees the pilot of a single-seater aircraft from all navigational worries.

Known as Position & Homing Indicator or PHI (everything is reduced to three initials at CDC), it is built around a computer which accepts all the information needed to plot a course, and then points the way.

Pilot's Job

In front of the pilot are six push buttons, a circular dial, a compass pointer and a pair of crosshairs. The pilot has only to keep the compass pointer in line with the crosshairs, to keep on course.

To change destination en route, the pilot pushes one of the other six buttons. Automatically, the instrument will point the way to one of five alternative destinations.

Extensive tests of PHI have been made by RCAF and USAF. A number of the instruments have been ordered by the RCAF, and, according to CDC, "several other NATO air forces are giving serious consideration to it."

A growing field of specialization at CDC is EDP, or Electronic Data Processing. Facilities at the new plant's data processing centre consist of two electronic computers — one analog (it measures), and one digital (it counts). On assignment, the centre undertakes economic forecasting, operations research, surveying, power engineering and other problems.

A large scale analog computer is to be installed this fall, and a large capacity, high speed digital computer will be added later.

In addition to performing such jobs as adding, multiplying and dividing, the electronic computer can round off decimals, extract part of the information fed into it, bring together similar pieces of data, accept information from outside, test for error, memorize, search its memory for information, punch paper tape, and print the answers.

The EDP staff includes mathematicians, statisticians, programmers, computer operators and computing assistants. They are part of CDC's work-force of nearly 500, which includes more than 100 scientists and engineers.

President is 42-year-old Charles Hembery, a Fellow of the Chartered Institute of Secretaries, and a former financial officer of Sperry Gyroscope (Ottawa) Ltd.

U. of T. Student Gets $1,400 Kodak Award

Award of a $1,400 Canadian Kodak Co. fellowship to Ronald E. Barrington of Toronto for postgraduate study in physics has been announced by the University of Toronto.

The fellowship is one of 30 grants totaling more than $100,000 being made by Kodak this year through Canadian and U. S. universities. The grants provide a $1,400 basic award, increased to $2,100 for married students with dependent children and a $1,000 allotment to the university to cover research expenses.

Company Reports

To assist readers in appraising and comparing company financial statements, The Financial Post has a uniform method of presenting corporation accounts. Variations from the companies' published reports are footnoted.

Mining

QUEBEC LITHIUM CORP. expects to reach capacity of 1,000 tons daily in June provided certain equipment is delivered in time, President Pierre Beauchemin states in the 1955 annual report. The concentrator with an initial capacity of 350 tons daily was turned over in December and a loss of $37,223 was reported for the Dec. 10-31 part of the tuneup period.

At the end of 1955, over $1 million cash remained in the treasury which was estimated to be sufficient both for enlargement of the mill and processing of concentrates into chemical products.

Recent tests are stated to have shown that by-products such as feldspar and quartz can be profitably recovered to supplement revenues to be received by the company from concentrates already sold through a five-year contract.

Although underground work has been limited in scope, Harty S. Berube, mine manager, expresses the view that 15 million tons of ore has been indicated to a depth of 500 ft. in a radius of 600 ft. around the shaft. Two stopes in operation at the end of 1955 contained 150,000 tons of ore grading over 1.2% and three other stopes were expected to be in production by early summer to anticipate demands for full mill requirements.

Balance sheet as at Dec. 31, 1955, showed $1,228,929 current assets including $1,156,669 cash and $58,481 of concentrates in transit as against current liabilities of $211,230. Mill, buildings, etc. are shown at $1,717,108 while pre-milling expenses are placed at $1,169,788.

Iron and Steel

BRIDGE & TANK CO. OF CANADA, Hamilton, Ont., consolidated net profit for 1955 was 3.1% lower than for 1954 ($386,448 vs. $398,778).

The increase in net earnings and general improvement in operations is encouraging in view of the adverse conditions during the first three quarters which affected sections of Canadian heavy industry in which company operated, says President and General Manager A. B. Hill.

Decline in total volume and unduly competitive conditions in the steel fabricating business throughout 1954 continued through first half of 1955. Operating results do not reflect the marked increase in the demand for all steel products and the consequent improvement in prices in latter half of year but these led to a substantial backlog at year end. Contracts and orders during the year were mostly booked during period of severe competition.

Ford-Smith Machine Co. and Vulcan, Ford-Smith Ltd., firms in which Vulcan Iron & Engineering Ltd. had previously held a 50% interest, became wholly-owned subsidiaries of company.

It also purchased undertaking and assets of Sawyer-Massey, Ltd., which was previously 80% owned. Operations were transferred to parent in September and are now carried on by company and a wholly-owned subsidiary.

A total of $74,000 first mortgage sinking fund bonds of Bridge & Tank and $46,500 of Vulcan were purchased and canceled.

Operations of company and subsidiaries show a marked improvement in both operating rate and profits. Order backlog in some divisions tops total output during 1955 and future outlook is most encouraging. However, the serious steel shortage is preventing capacity production and possibility of steel mill labor stoppages may further cut production, company says.

CONS. INCOME ACCOUNT

Years Ended Dec. 31:	1955	1954
Net earnings	$991,790	$1,126,605
Less: Depreciation	164,571	228,635
Bond interest	162,021	137,364
Income taxes	196,205	317,203
Organ. & fin. exps.	7,300	.....
Prem. on red. bds.	660	1,246
Minority interest & prof.	74,585	43,379
Net profit	386,448	398,778
Less: Pref. div.	116,000	77,333
Surplus for year	270,448	321,445

Note—Co.'s reports show net profit of $442,707 in 1955 and $402,356 in 1954 incl. profit on sale of assets. On this basis earnings per share would be $11.07 per share on the preferred and $1.31 on the common in 1955; $10.06 and $1.30, resp., in 1954.

▲Period from Feb. 10 to Dec. 31.

Times Interest Earned:

Before deprec.	6.12	8.20
After deprec.	5.11	6.53

Earnings per Share and Dividend Record:

Preferred	$9.66	$9.97
Paid	2.90	†1.93⅓
Common	1.08	1.29
† None paid.		
‡Incl. initial.		

CONDENSED CONS. BALANCE SHEET

As at Dec. 31:	1955	1954
Cash & treas. bills	$615,125	$338,659
Accts., etc., rec.†	2,740,923	2,416,879
Deposits on contracts	28,000	73,986
Inventories	4,539,716	4,221,380
Total curr. assets	7,923,764	7,100,904
Prepaid expenses	48,196	57,355
Def. chgs.	94,990	86,952
Pref. s.f. dep.	28,636	.....
Invest. in assoc. co's.	.....	107,107
Mtges.	18,046	31,490
Fixed assets‡	5,661,173	5,766,058
Total assets	13,774,775	13,149,866
Bank loan	890,434	1,691,210
Notes pay.	41,588	41,306
Accts. & tax, etc., pay.	2,639,748	1,219,906
Total curr. liabs.	3,571,770	2,952,422
Note pay.	100,000	.....
Min. int. in subsid.	334,120	365,970
Funded debt	3,108,000	3,328,500
Capital stock	2,836,186	2,836,186
Appraisal surp.	3,172,970	3,441,766
Earned surp.	651,729	225,022
†After reserve of	22,110	45,377
‡After deprec. of	1,548,170	1,442,106

*Pro forma.
‡Incl. in curr. assets in co's report.
†After deducting advance billings on uncompl. contracts of $1,185,527 in 1954.

Working capital	4,351,994	4,148,482

Note—Contingent liability consisting of notes receivable of subsidiary company, discounted with finance companies was $359,231 at Dec. 31, 1955.

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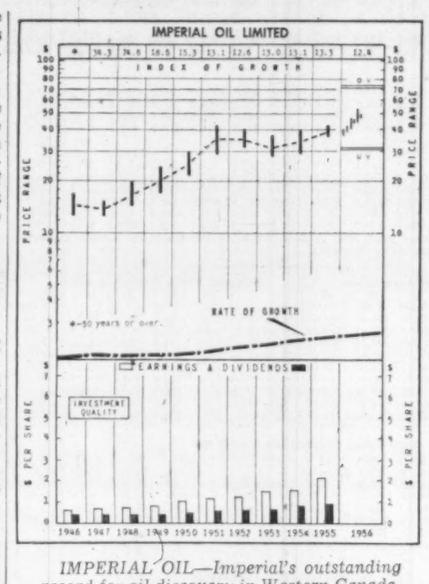
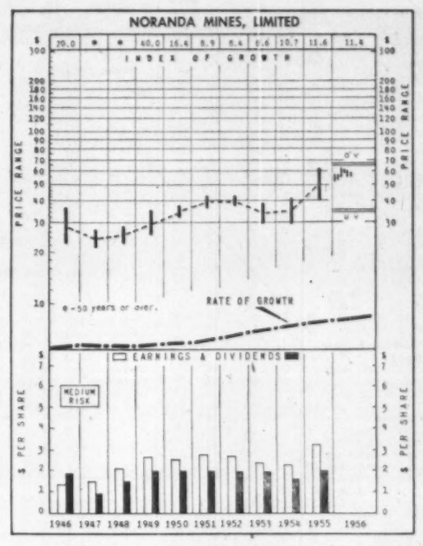
Selected Growth Stocks — Quarterly Review — By NESTOR

The Financial Post's exclusive series of Selected Growth Stocks was chosen by one of the continent's most prominent and successful investment advisers. The reasons for choice shown below the accompanying charts were those given when stocks were chosen in January 1953. Each will be reviewed quarterly. Publication of this series in The Post does not constitute a recommendation to buy these stocks.



IMPERIAL OIL—Imperial's outstanding record for oil discovery in Western Canada, its large reserves, and its continuing exploration and expansion program promises, along with the continually growing demand for petroleum products, to maintain the company's position as Canada's largest and most fully integrated oil company.



NORANDA MINES—Noranda is a major integrated copper producer with large gold output. Furthermore, a sizeable income from its investments tends to stabilize earnings and income. Further expansion of properties promises increasing earnings over the long term. Directly and indirectly, the company's shares afford a diversified position in gold, copper and other base metals as well as in potential oil acreage.

Imperial Oil

Imperial Oil common, trading recently at $50 is about 61% above its UV level ($31) and could rise another 42% before touching OV level ($71). Yield is 2% based on an annual dividend rate of $1 and the stock is selling about 24 times 1955 earnings of $2.08 a share. Price range so far this year is a high $52¾ and a low of $36⅞.

In the first quarter of the current year, earnings jumped 49% to $19.2 million, equal to 64c a share, from $12.9 million at 43c a share in the same period last year. However this rate of increase may not be maintained throughout the year since the first quarter results include some non-recurring items. Product sales in the quarter were up 11%, crude oil output increased 19%.

Outlook continues to expand with a 50% increase in Canadian vehicles anticipated by 1960. Since the end of the war, number of vehicles on the road has doubled. Company is becoming increasingly active in petrochemical field. First venture of its new chemical department is a $3.8 million plant at Sarnia to make the main ingredient in household detergents.

Imperial also reported planning a plant near Sarnia to manufacture ethylene. This plant would cost about $12 million and would use raw materials from the company's refinery gas streams. Overall expansion planned for this year is expected to cost $115 million — the largest in the history of the company.

Earnings in 1955 totaled $62.2 million, equal to $2.08 a share, up from $49.6 million or $1.66 a share in the previous year.

Noranda

Noranda Mines, trading recently at $59¼ is 69% above its UV level ($35) and could rise another 5% before touching OV level ($62). Yield is 3.38% based on annual dividend rate of $2 and the stock is selling 17.9 times 1955 earnings of $3.31 a share. Price range for the year to date is a high of $64⅝ and a low of $51½.

With copper continuing in strong demand, company continues to have trouble meeting commitments and generally is oversold. Operations at Gaspe Copper property (Noranda has a 95% interest) running well with 100 tons of copper daily being turned out as capacity operations resumed following resumption of power delivery.

If the price of copper holds at about present levels, Gaspe's total earnings in three-year period of tax exemption should about total the $48 million in expenditures in getting the company into operation. Most of the money was advanced by Noranda, and with repayment of indebtedness underway, Noranda will use the money to finance its own expansion. This expansion includes a third reverberatory smelting furnace to increase Noranda smelter capacity by 50%.

Copper is under some price pressure from fabricators who would like to see a lower price than the 46c level now prevailing in North America. Supplies are also increasing as new mines come into production and users are tending to hold off purchases in the hope of a decline. London Metal Market copper is at about 38c a pound. If there is any drop in price, industry officials feel it might amount to three cents a pound and would likely be temporary since over-all demand still appears to exceed supply.

Noranda had a profit of $14.9 million in 1955, well up from $9.9 million in 1954. In the first three months of the current year, estimated net profit is up at $4,083,000 from $3,281,000. Metal production increased to $7,399,000 from $5,715,000. Investment income slipped to $1,528,000 from $1,640,000.

How To Read Stock Charts

INDEX OF GROWTH: The rate at which the value of the equity behind the stock is doubling as determined by the growth rate at which it entered the year. A figure of 5.6 for the present year would indicate that at its current growth rate the equity value is doubling every 5.6 years.

Price RANGE: The annual high, low and mean price. Monthly ranges for the current year.

UNDEVALUATION AND OVERVALUATION PRICE LEVELS: Shown by the narrow horizontal lines above and below the stock's price range indicating price at which the particular stock is adjudged as underestimating or overestimating its future rate of growth. A stock showing a fast-growth rate will sometimes anticipate growth by two or three years. In this case it may not be so attractive a purchase relatively as some other fast-growing stock that is not anticipating its growth beyond the immediate present. Other factors such as rate of growth and investment quality will also enter into the comparison an investor will want to make.

Without these UV and OV levels, a current quotation of say, 55 or 75 would carry no significance regarding long-range value. The UV/OV levels also permit judgment as between one stock and another. They are not designated points of purchase or sale nor do they attempt to show what will be a stock's bottom or top figure in any given year.

RATE OF GROWTH: the rate as based on Nestor's tests at which the company is showing underlying or long-term growth. This will determine the price trend of the company's common stock over a period of years and in most instances the trend of dividend payments.

**Background and principles behind the selection by Nestor were discussed in a special article in The Financial Post., Jan. 10, 1953. A limited number of reprints are available on request.*

Company Reports

To assist readers in appraising and comparing company financial statements, The Financial Post has a uniform method of presenting corporation accounts. Variations from the companies' published reports are footnoted.

Iron and Steel

ALGOMA STEEL CORP., Sault Ste. Marie, Ont., consolidated net profit for 1955 was $10,441,834, 134% higher than net profit of $4,464,478 for 1954.

Improved demand for iron and steel products resulted in increased production after first quarter of 1955, consequently steel products' shipments set a new record while pig iron shipments were among highest in company's history. Algoma reached steel rolling capacity about mid-year and it became necessary to allocate products to customers, reports President D. S. Holbrook.

Company has further diversified its production. It began manufacture of flat rolled steel, form in which most north American steel is turned out. Most important steel consisted of strip, and narrow sheets and plates. Continued emphasis on production of Algoma Sinter and pig iron and their increased sales greatly helped diversification, company says.

Algoma's $83 million modernization program carried out from 1950 through 1954 has proven highly successful. Obsolete equipment has been discarded and replaced by new units which have cut costs.

Change in composition of dollar sales volume in last two years (since completion of modernization program) compared to five years previous to modernization is as follows:

Coal 0.6% (4.5% prior to modernization), Algoma Sinter 8% (3.8%), coke and by-products 7.1% (13.1%), pig iron 22.5% (13.5%), steel for rerolling by other steel producers 9.6% (18.8%), rails and fastenings 12.5% (21.1%), bars 12.5% (16.8%), structurals 6% (7.3%), flat rolled 20.1% (nil), making total for all steel products 60.7% (64%) and sundry 1.1% (1.1%).

Algoma sinter, pig iron and flat rolled steel products now constitute a greater proportion of sales. Coal, coke and coke by-products, steel for rerolling, rails and fastenings and bars are considerably less. In first quarter of 1956 flat rolled products sales percentage of total has still further increased.

Working capital increased by $16.2 millions due to higher earnings, lower capital expenditures and deferment of $5,517,000 income tax. Company continued adequate depreciation provision on straight line basis in financial statements, and claimed maximum allowed for income tax purposes. Depreciation claimed for tax purposes above amount in statements resulted in the $5.5 million tax deferment. This will become payable in future and has been added to deferred liability for income tax.

Deferred credit to income of $458,698 resulted from shipments made late in 1955 to take advantage of lower cost water transportation but not due until 1956.

Capital expenditures amounted to $4,403,560. This included expansion of combination bar and strip mill and cold strip mill at Sault Ste. Marie to raise their capacities to 400,000 tons and 80,000 tons annually respectively; start on construction of a plant at Sault Ste. Marie to make grinding balls in wide size range; underground mining equipment and development work at iron ore mines at Jamestown to bring three additional mining levels into production and mechanical mining equipment at coal mines in West Virginia.

Company has authorized important additional expenditures estimated at $8 millions including:

—At Lake Superior Coal Co.'s West Virginia mine a new coal preparation plant is being built with a 300 to 350-ton capacity per hour.

—Algoma Ore Properties, at Michipicoten iron range, is developing the Sir James Mine at Siderite Hill and installing a sixth sintering machine at Jamestown, increasing capacity of Algoma Ore Properties for Algoma Sinter by 350,000 tons annually.

—At Sault Ste. Marie Steel Works company will install a new 20-ton capacity ore bridge to handle larger quantities of iron ore.

—Algoma expects all these projects will be complete and in operation by 1957, and will raise production while cutting costs.

Algoma's capacity for many products is committed into third quarter of 1956. Company expects that iron ore demand will keep this capacity fully occupied throughout year.

Algoma is considering introduction of oxygen process of making steel.

CONSOL. INCOME ACCOUNT

Years Ended Dec. 31:	1955	1954
	$	$
Net sales	114,935,380	unstated
Net earnings	23,846,114	12,283,833
Less: Loan int.	419,675	444,198
Other int.	226,231	531,416
Depreciation	5,079,761	4,983,681
Income taxes	17,676,613	1,880,058
Net prof. & surp.	10,441,834	4,464,478
Earnings per Share and Dividend Record:		
Common	$6.33	$2.70
None paid.		

CONDENSED CONS. BALANCE SHEET

As at Dec. 31:	1955	1954
Cash	$2,090,011	$827,093
Receivables	15,770,517	7,172,426
Inventories	32,132,343	31,146,409
Total curr. assets	49,992,873	39,145,928
Misc. assets‡	975,226	1,136,780
Investments	6,932,362	6,883,572
Agreements of sale	462,093	494,433
Fixed assets*	50,357,176	50,915,605
Total assets	108,717,930	98,576,318
Bank loan, sec.	2,325,000	12,519,000
Accts. pay.	8,596,236	7,269,971
Inc. taxes	2,527,884	170,140
Total curr. lab.	14,449,120	19,958,111
Long-term loan	12,579,648	13,344,577
Deferred inc. tax	7,292,000	1,775,000
Deferred inc. credit	458,698	...
Capital stock	10,274,500	10,274,500
Contrib. surplus	3,071,745	3,071,745
Earned surplus	62,781,447	52,339,613
Less: Cost shs. owned by subs.	2,187,228	2,187,228
*After depr. & depl of	72,844,263	68,248,367

†Of which $939,783 in 1954 and $756,001 in 1955 prepd.

Note—Reserves amounting to $1,698,729 in 1954 and $2,064,823 in 1955 for accruals for rebuilding and relining furnaces, etc., deducted from fixed assets.

Working capital 35,543,753 19,187,817

Rail Labor Wins Another 11% Raise

MONTREAL (Staff) — The second of three railway running trades — Brotherhood of Locomotive Firemen and Enginemen—has signed a two-year contract with Canadian National Railways.

The terms: The now-established rail pattern of 11% plus other benefits, same as in the contract signed between CNR and Brotherhood of Locomotive Engineers several weeks ago.

This leaves but one of the running trades — Brotherhood of Railway Trainmen — still to reach an agreement with CNR. It's expected settlement with the Trainmen will follow the 11% pattern.

The CPR is negotiating with its running trades but no agreements have been announced yet.

The 11% pattern was set earlier in rail negotiations with the non-operating unions.

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	Bid	Ask.
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Do. pfd.	1.50	....
Aliens Toronto Units	43.00	....
Anglo Can. Telephone A	26.00	26.75
Bowater Ltd.	7.10	7.30
Bowes Ltd. 1% pfd.	.75	.90
Brinton Peterboro Carpet	50.00	....
British America Assoc.	125.00	129.00
B. C. Sugar	28.00	30.00
British Mortgage & Trust	212.00	227.00
B. C. Telephone 4½% pfd.	94.00	97.00
Can. Cr. Stone 6% pfd.	97.00	100.00
Can. Cons. Grain Units	85.00	....
Do. common	5.00	8.00
Can. Delhi Pete.	6.85	7.15
Can. Foreign Secur.	12.00	13.50
Can. Insurance Shares	100.00	110.00
Carlton Club	130.00	....
Cawthra Apts.	37.00	....
Chase, Dr. A. W. com.	1.75	2.25
Colonial Steamships com.	185.00	195.00
Commercial Finance	47.00	....
Concourse Bldg. V. T.	51.00	....
Crain, R. L. pfd.	.80	....
Crown Life Insce.	145.00	....
Debent. & Secur. 5% pfd.	92.00	94.00
Detroit Internat. Bridge	18.75	20.75
Dom. Can Gen. Insce.	80.00	....
Dom. Linseed Oil pfd. & c.	2.75	....
Dover Industries	10.75	11.25
Eastern Canada Savings	31.00	....
Eastern Trust Co.	31.25	32.00
Essex Packers common	2.00	3.00
Do. pfd.	43.00	....
Goderich Elevators	22.75	24.00
Granite Club	14.25	14.75
Gt. Brit. & Can. Inv. com.	13.75	14.50
Do. pfd.	115.00	119.00
Great Lakes Power com.	19.50	20.75
Great-West Life Assurance	260.00	270.00
Guar. N. Amer. fully pd.	430.00	450.00
Do. 20% pd.	92.00	....
Halifax Insce.	17.50	18.25
Halton & Peel Trust	10.00	11.00
Highland Dairy pfd.	40.00	....
Homewood, Sanitarium	90.00	....
Hudson's Bay Co.	25.00	25.50
Humber Amuse. Pier	.35	.50
Humberstone Shoe	8.25	9.00
Indust. Mort. & Trust	72.00	....
Ingersoll Mach. 4% pfd.	90.00	94.00
Do. B	5.25	6.00
Ingram & Bell pfd.	103.00	....
Inland Natural Gas	6.60	6.85
Jenkins Bros. com.	62.00	....
Lambton Golf Club	325.00	....
Lambton Loan	82.00	85.00
Lawson & Jones 1% pfd.	.75	....
Lond. Can. Inv. $3.00 pfd.	49.00	....
Do. A	42.00	46.00
London Life Insce.	190.00	200.00
Lord Simcoe Hotel A.	2.75	3.25
Manufacturers Life	268.00	275.00
Monarch Life 60% pd.	290.00	....
Morrow Screw	40.00	....
National Life	300.00	350.00
Nat. Sewerpipe Units	14.00	17.00
Niagara Lower Arch Bridge	66.00	70.00
Northern Telephone	4.50	4.80
Nova Scotia Trust	20.00	....
Oakville Golf Club	20.00	30.00
Oakville Wood 6% pfd.	89.00	95.00
Paramount Oshawa Th.	12.50	....
Park Lawn Cemetery	1.75	....
Phillips Electrical	15.00	16.00
Prairie Roy. Trust Units	2.25	....
Prudential Trust	16.00	18.00
Rapid Grip Batten pfd.	99.00	102.00
Reliance Pete A & B	22.00	....
Do. pfd.	44.00	48.00
Robin Jones Whitman pfd.	22.00	24.00
Royal Oak Dairy'B	3.00	....
Sherbrook Trust	155.00	....
Sincennes McNaught. Line	3.00	....
Skyway Drive-In Th.	1.40	1.70
Sovereign Life 25% pd.	92.00	....
Standard Fuel common	2.75	....
Do. pfd. $2.25	39.50	42.00
Summit Golf	18.00	25.00
Sun Life Assce.	287.00	297.00
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Teleflex	16.50	17.50
Thorncliffe Park	6.50	7.00
Toronto & London Inv.	1.95	2.25
Toronto Gen. Insurance	25.00	28.00
Tor. Medical Arts Bldg.	50.00	....
United Can. Shares	20.50	21.50
Waterloo Mfg.	7.00	8.00
Waterloo Trust	31.50	....
Westcoast Trans. V.T.	19.75	20.75
Do. units	142.50	145.00
Western Assurance	77.00	80.00
Western Life	68.00	78.00
Wood Alexander 6% pfd.	92.00	96.00

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June 19, 1956

Public Utility Issues	Int. Rate %	Due	Bid	Ask.	Prev. Week Bid
Alg. Cen. H.B.R.	5	'59	154	156	154
Bell Tele.	3¼	'79	94	97	93
Bowater Pr. Co.	3½	'80	92	95	92
Braz. Trac. L. & P	4½	'70	83	86	83
B. C. Electric	3½	'67	91	94	91
Do.	3½	'75	89	92	89
Do.	3½	'80	91½	94½	91½
Do.	4½	'79	100½	103½	101
B. C. Telephone	4½	'75	99	102	99
Calgary Power	3½	'72	91	...	91
Consumers' Gas	4½	'74	93	96	93
Gatineau Pr. D	3¼	'70	91½	94½	91½
Gt. Lakes Pwr.	4½	'75	96	99	96
Maclaren-Quebec Power	3	'69	88	91	88
Mex. Lt. & Pwr.	5	'75	90	93	90
Nat. Lt. & Pwr.	4½	'61	96	99	96
North. Que. Pr.	4½	'67	94	97	94
Power Corp.	3½	'67	90	93	90
Quebec Power	3	'62	93	96	93
St. Maurice Pr.	3½	'70	90	93	90
Shaw. W. & Pr.	3	'71	88	91	88
Do.	3½	'73	90	93	90
Wpg. Electric	3½	'71	95½	98½	96
Industrial Issues:					
Abitibi Pr. P.	4	'74	95	98	95
Acadia-At. Sug.	4	'74	91	94	91
Aluminum Co.	4½	'73	99½	102½	99½
Bathurst P. & P.	5½	'73	98½	101½	98½
B. A. Oil	3½	'74	92	95	92
Burns & Co.	4	'63	95	98	95
Canada Bread	4½	'67	92	95	92
Canada Cement	3½	'75	92	95	92
Can. Steamship	4	'66	96	99	96
Can. Breweries	4½	'79	101	104	101
Can. Canners	3½	'70	93	96	93
Can. Celanese	3	'62	90	93	90
Can. Chem. Co.	5½	'71	98	101	98
Can. Industries (1954) Ltd.	3½	'74	93	96	93
xCan. Oil	4	'76	93	96	93
C.P.R.	3¼	'72	95	98	95
Can. West. Lum.	4	'62	97	100	97
Cockshutt Plow Co.	4½	'65	91	94	91
Columbia Cell.	5	'68	97	100	96½
Dom. Fd. & Stl.	4½	'69	97	100	97
Dom. Tar & Ch.	5	'67	101	104	101
Dryden Paper	4½	'74	99	102	99
T. Eaton Accept.	4½	'74	99	102	99
E. B. Eddy	4	'74	92½	95½	92½
Elk Falls Co.	5	'75	97½	100½	97½
G. M. Accept.	4	'64	97	100	97
Gunnar M. Ltd.	5	'60	99	102	99
Hudson Bay Oil & Gas	4	'75	92	95	92
xHusky Oil	5	'69	95	98	95
Imp. Tobacco	3	'70	89	92	89
Imp. Oil	3½	'75	93	96	93
Indust. Accept.	4½	'74	93	96	93
Irving Oil Co.	5½	'67	99½	102½	99
Loblaw Groc.	4	'75	92½	95½	92½
Maple L.M.	3½	'63	92	95	92
Massey-Harris	5	'67	99	102	99
Monarch Knit.	4½	'71	73	76	73
N. S. Stl. Coal	3½	'63	95	98	95
*Ont. Jockey Cl.	5½	'72	98	101	98
Price Bros.	3½	'66	91½	94½	91½
Pronto Uran. Mines Ltd.	5	'60	95	98	95
St. Law. Corp.	5	'72	100	103	100
Silverwood D.	4	'71	94	97	94
Simpsons Ltd.	4½	'73	98	101	98
Simpsons-Sears Ltd.	4½	'79	97	100	97
Steel Co. of Can.	2½	'67	90	93	90
Traders Finance	5½	'69	100	103	100
Union Accept. C.	5½	'68	97	100	97
Un. Grain Grow.	3½	'70	89	92	89
Weston, Geo.	4½	'68	99	102	99

xEx wts.
*Cum.wts.

CONVERTIBLE ISSUES

Ajax Pete. Ltd.	5	'62	92	95	92
Anglo-Am. Exp.	5½	'75	101	...	101
Atlas Steels	5	'67	109	112	109
Braz. Traction	4½	'71	82	85	82
Can. South Oils	5	'61	81	85	81
C.P.R.	3¼	'66	103	106	103
Do.	4	'69	106	109	106
Cdn. Petrofina	4	'72	127	130	123
Cent. Leduc Oils	5	'65	90	93	90
Cockshutt Farm	5	'68	92	95	92
Dom. Stl. & C.	4½	'70	111	114	112
Dom. Textile	4	'66	92	95	92
Jupiter Oils	5	'67	90	93	90
Kroy Oils	5	'67	97	100	97
N. Concord D.	5½	'65	91	96	91
N. Superior Oils	5	'64	96	99	96
Pathfinder Pete	3-5	'62	85	90	85
Power Corp.	4½	'68	169	...	169
Scurry Oils Ltd.	5	'64	93	97	93
Silverwood Dair.	5½	'72	110	113	110
Traders Finance	4½	'69	110	113	110
Trans Emp. Oil	5	'66	92	...	92
Do.	5½	'67	97	...	97

Record of Financing

Sales by Municipalities, Provincial and Dominion Governments. Offerings of Corporations and Securities.

DOMINION

Government of Canada Treasury Bills—Due Sept. 14, 1956, $130,000,000. Issued June 15, 1956. Sold at $99.339 to yield 2.67%.

MUNICIPAL

School Commission of Village of Ormstown, Que. — 3½% and 4½% debentures, due May 1, 1957-63-76, $248,000. Issued Apr. 30, 1956. Sold privately at $97.75.

Town of Aylmer Separate School Board, Ontario — 5% debentures, due June 15, 1957-76, $35,000. Issued May 25, 1956. Sold at $98.49 to A. E. Ames & Co. Limited.

City of Beauharnois, Que. — 3½% debentures, due May 1, 1975-86, $300,000. Issued May 25, 1956. Sold privately at $100.00.

Town of Bedford, Que.—4% debentures, due Aug. 1, 1956-61, $20,000. Issued May 25, 1956. Sold privately at $99.31.

Township of Essa, Ontario — 5% debentures, due May 30, 1957-66, $28,000. Issued June 4, 1956. Sold at $99.08 to Anderson & Company Limited.

Town of Milton, Ontario — 5% debentures, due July 15, 1957-76, $288,105. Issued June 4, 1956. Sold at $97.38 to J. L. Graham & Co. Limited and Bankers Bond Corpn. Limited.

City of North Bay, Ontario — 4¾% debentures due July 15, 1957-76, $719,000. Issued June 4, 1956. Sold at $101.12 to J. L. Graham & Co. Limited.

Town of Prescott, Ontario — 3½% and 4% debentures, due June 1, 1957-76, $18,000. Issued June 4, 1956. Sold at $93.03 to Dawson, Hannaford Limited and Toronto-Dominion Bank.

Township of Westminster, Ontario — 4½% debentures, due June 28, 1957-66, $113,832. Issued June 4, 1956. Sold at $98.64 to Dominion Securities Corpn. Limited.

Township of Colborne, Ontario — 4¾% debentures, due Aug. 1, 1957-76, $40,000. Issued June 5, 1956. Sold at $99.25 to Nesbitt, Thomson & Co. Limited.

Town of Port Dover, Ontario — 4¾% debentures, due June 28, 1957-66, $140,000. Issued June 5, 1956. Sold at $99.33 to Deacon, Findley, Coyne Limited and Royal Bank of Canada.

School Commission of St. Francois-Regis, Que. — 4% and 4½% debentures, due May 1, 1957-71-76, $65,000. Issued May 6, 1956. Sold at $98.05 to Desjardins, Couture, Inc.

City of St. Laurent, Que. — 4% and 4½% debentures, due June 1, 1957-66-76, $1,085,000. Issued June 8, 1956. Sold at $95.50 to Nesbitt, Thomson & Co. Limited, Gairdner & Co. Limited, Dawson, Hannaford Limited, Geoffrion, Robert & Gelinas Inc. and W. C. Pitfield & Co. Limited.

City of Prince George, B.C. — 4% and 4¾% debentures, due July 15, 1957-76, $547,000. Issued June 8, 1956. Bought privately by McLeod, Young, Weir & Co. Limited, Mills, Spence & Co. Limited, Equitable Securities Canada Limited and Bank of Montreal.

CORPORATE

Silbak Premier Mines Limited — 6% first (closed) mortgage sinking fund bonds (carrying bonus of common shares), due June 1, 1959, $250,000. Issued May 25, 1956. Offered at $100.00 by C. M. Oliver & Company Limited.

Chateau-Gai Wines Limited — 5% first mortgage sinking fund bonds, series A, to mature June 1, 1976, $500,000. Dated June 1, 1956. Offered at $100.00 and accrued interest by Equitable Securities Canada Limited.

PREFERRED

British Columbia Telephone Company — 4¾% cumulative redeemable preferred shares (series 1956), par value $100.00, $7,500,000. Offered at $100.00 per share flat by W. C. Pitfield & Company, Wood, Gundy & Company Limited, Nesbitt, Thomson and Company Limited, Dominion Securities Corpn. Limited, The Western City Company Limited, Pemberton Securities Limited, Royal Securities Corporation Limited, McLeod, Young, Weir & Company Limited, Greenshields & Co. Inc., Odlum Brown Investments Limited, Midland Securities Corporation Limited, Rene-T. Leclerc, Incorporee, James Richardson & Sons, Cochran, Murray & Co. Limited, Yorkshire Securities Limited, C. M. Oliver & Company Limited, Collier, Norris & Quinlan Limited, Okanagan Investments Limited, H. J. Bird & Company Limited and Thomson B. Read Company Limited.

COMMON

Mid Chibougamau Mines Ltd. — 2,000,000 shares (par value $1.00 each). Offered at $0.60 per share by W. C. Pitfield & Company Limited, Midland Securities Corpn. Limited and Isard, Robertson and Co. Limited.

ELK CREEK WATERWORKS CO., Vancouver, shareholders at annual meeting approved increase in authorized capitalization to 300,000 common shares, no par, from 100,000 shares.

Significant Investors' Index Numbers

No. of Securities	Mach. and equip. 10	Pulp and paper 9	Milling 2	Oils 5	Textiles and clothing 9	Food and allied prod. 14	Beverages 10	Bldg. mater. 15	Power and traction 8	Banks 7	Total utilities 13	Total co's 96
*1935 to date:												
High	891.2	1238.1	252.0	218.0	410.5	203.5	650.0	535.9	204.3	294.3	214.1	276.2
Low	69.7	51.6	61.2	78.4	78.4	79.5	79.3	66.7	60.2	60.0	62.5	61.1
1956 Monthly Figures:												
Jan.	735.6	1070.0	209.4	175.5	179.9	196.8	583.7	458.4	192.6	260.0	206.5	248.5
Feb.	728.0	1077.3	199.2	182.6	174.0	197.3	579.0	464.0	190.6	264.2	204.1	249.2
Mar.	804.6	1153.0	199.6	205.2	178.8	199.7	590.4	503.6	194.3	276.8	210.2	267.9
Apr.	826.4	1223.9	187.4	210.0	170.9	191.8	577.5	519.5	200.2	288.7	209.3	273.0
1956 Weekly Figures:												
May 3	891.2	1228.4	186.8	215.5	168.0	184.6	567.5	512.4	200.2	283.0	207.2	276.2
May 10	852.9	1209.8	181.8	218.0	162.6	179.2	556.7	505.5	202.8	273.6	206.3	272.5
May 17	856.1	1195.5	179.9	212.9	159.6	182.0	548.1	486.0	201.7	269.1	205.1	269.5
May 24	813.4	1164.2	172.3	204.2	156.2	178.2	536.4	469.6	199.6	267.7	200.4	260.6
May 31	827.0	1164.5	178.0	207.7	156.6	179.8	549.9	489.2	200.6	265.0	201.9	263.6
June 7	838.3	1148.2	169.9	215.7	160.2	180.7	553.5	461.7	203.3	258.4	200.1	265.3

*High and low for year from 1935 to date inclusive are based on weekly figures used by the Dominion Bureau of Statistics.

Toronto Stock Exchange Index

	20 Indus.	20 Golds	15 B.M.	15 W.O.
June 18	453.77	85.47	236.21	149.87
June 15	453.07	85.51	237.43	149.33
June 14	451.52	84.66	236.30	150.15
June 13	451.10	84.69	236.79	149.95
June 12	449.13	84.81	234.73	149.00
Month Ago	446.19	85.00	232.00	147.82
Year Ago	414.52	85.98	196.02	113.05
1956 High	481.56	90.35	251.20	157.27
1956 Low	430.46	83.74	218.46	118.09

Montreal Stock Exchange Index

	10 Util	30 Indus	30 Com	10 Pprs	15 Golds
June 18	136.0	300.0	285.3	1576.57	82.85
June 15	135.5	299.3	244.7	1573.50	83.29
June 14	136.5	297.8	244.0	1565.59	83.10
June 13	136.4	299.7	245.3	1563.95	83.45
June 12	135.3	298.0	243.8	1554.78	82.96
Month Ago	137.3	315.4	256.1	1585.58	85.65
Year Ago	135.8	289.5	238.3	1448.58	84.03
1956 High	138.1	329.9	265.5	1612.48	89.73
1956 Low	133.7	283.5	233.7	1341.29	75.69

Dow-Jones Closing Stock Averages

	30 Indus	20 Rails	15 Util	65 Stocks
June 18	483.91	166.23	66.30	173.58
June 15	483.91	166.80	66.32	174.15
June 14	485.52	166.70	66.15	173.96
June 13	487.08	166.22	66.23	174.15
June 12	485.49	165.13	65.91	173.36

	30 Indus	20 Rails	15 Util	65 Stocks
Month Ago	491.62	172.49	66.13	177.00
Year Ago	444.38	160.70	64.37	163.40
1956 High	521.05	181.23	67.52	183.27
1956 Low	462.35	153.97	63.03	164.29

Government Bonds

(Supplied by Investment Dealers' Assoc. of Canada)

June 19, 1956

%	Due	Bid	Ask
Govt. of Can. Bonds:			
3	Jan. 1959	98½	99½
3	June 1960	97½	98
3	Feb. 1962	97	97½
3	Oct. 1963	96½	97½
3	Sept. 1966	95½	96½
3	Perpetual	190	91
2½	June 1968	93	94
3½	Jan. 1975/78	103	104½
3½	June 1974/76	97½	98½
Can. Nat. Railways:			
3	Jan. 1959	98½	99½
2½	Jan. 1967	92½	93½
3	Jan. 1966	95½	96½
3½	Sept. 1969	92½	93½
4½	July 1957	♦100½	101½
Grand Trunk Pacific Rly.:			
3	Jan. 1962	▪97	99
4	Jan. 1962	▪101	103
Inc. Bank of Reconstruct. & Devel't.			
3½	Apr. 1965	94	96
3½	June 1969	95	97
C'wealth of Australia:			
4	Nov. 1970	96½	98½

Prov. Govt. Bonds

Alberta:			
2¾	Mar. 1970	♦91	94
British Columbia:			
4½	Jan. 1969	♦106	108½
3	Dec. 1960	96	97½
3	June 1964	94	95½
5	Sept. 1959	♦103	104½
B. C. Power Comm.:			
3	Oct. 1967	92	94
Manitoba:			
4	Dec. 1957	♦100	101
5	Dec. 1959	▪103½	105
5½	July 1958	†102½	103½
4	Oct. 1965	93	95
4½	Dec. 1956	♦100	101
New Brunswick:			
4½	Apr. 1961	♦102½	103½
2½	June 1966	88½	90
3½	May 1957	99	100
3½	Sept. 1965	96	97
Nova Scotia:			
4½	Nov. 1960	♦102	103½
5	Mar. 1960	♦103½	104½
3½	June 1963/65	95½	96½
3	June 1956/58	98	99
2½	June 1965/68	89	91

Ontario:			
2½	Nov. 1965/69	88	90
4	June 1962	▪101	103
4½	Jan. 1962	♦103½	105
2½	July 1967/76	86½	87½
3	Nov. 1963/65	93½	95
5	May 1959	▪103½	104½
4	June 1969/72	100	101
Ontario Hydro Comm.:			
4	Aug. 1957	▪99½	100½
2½	Oct. 1965/68	89	90
3	Dec. 1963/65	93	94½
3	Nov. 1967/69	90½	92½
3½	May 1974/79	93	95
Prince Edward Island:			
3	Oct. 1965	93	94½
Quebec:			
4½	Aug. 1958	100½	101½
4½	Jan. 1963	102	103
3	Sept. 1962/64	94	95
Quebec Hydro Commission:			
3	Feb. 1969/73	90½	92½
3	Dec. 1958/60	96½	97½
3½	May 1971/74	92½	93½
Saskatchewan:			
5	Aug. 1958	101½	102½
4½	Mar. 1960	♦102	103½
5	Dec. 1959	♦103½	104½
3	Mar. 1963	92	94
3½	Nov. 1960/62	94½	96
3½	Oct. 1962/65	96½	98½
Newfoundland:			
4½	July 1964	101	102½

▪Payable Can., N.Y. or £. ♦Payable Can. or N.Y. †Callable on or after Sept. 15, 1956.

KINGSWAY TRANSPORTS LIMITED

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Following a year of operations into Detroit from Windsor, Ontario, on a temporary authority, Kingsway Transports Limited have been granted authority by the Interstate Commerce Commission to operate into Detroit on a permanent basis, thus providing Kingsway with its second international route. This permits a continuing service from Quebec City - Three Rivers - Montreal - Toronto - Kitchener - London-Windsor to Detroit, and allows a direct connecting link with leading U.S. carriers serving the Detroit area.

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decorates and preserves wood, rough or smooth plaster, wallpaper, concrete, stucco or brick.

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No need now for special shifts to paint offices, cafeterias, company housing projects or other buildings, either inside or outside, because of smelly, slow drying paint. Norplex is odourless and fast drying — can be brushed, rolled or sprayed — and, if necessary, painting can be done during normal work hours. Even in cafeterias regular service can be maintained while decorating.

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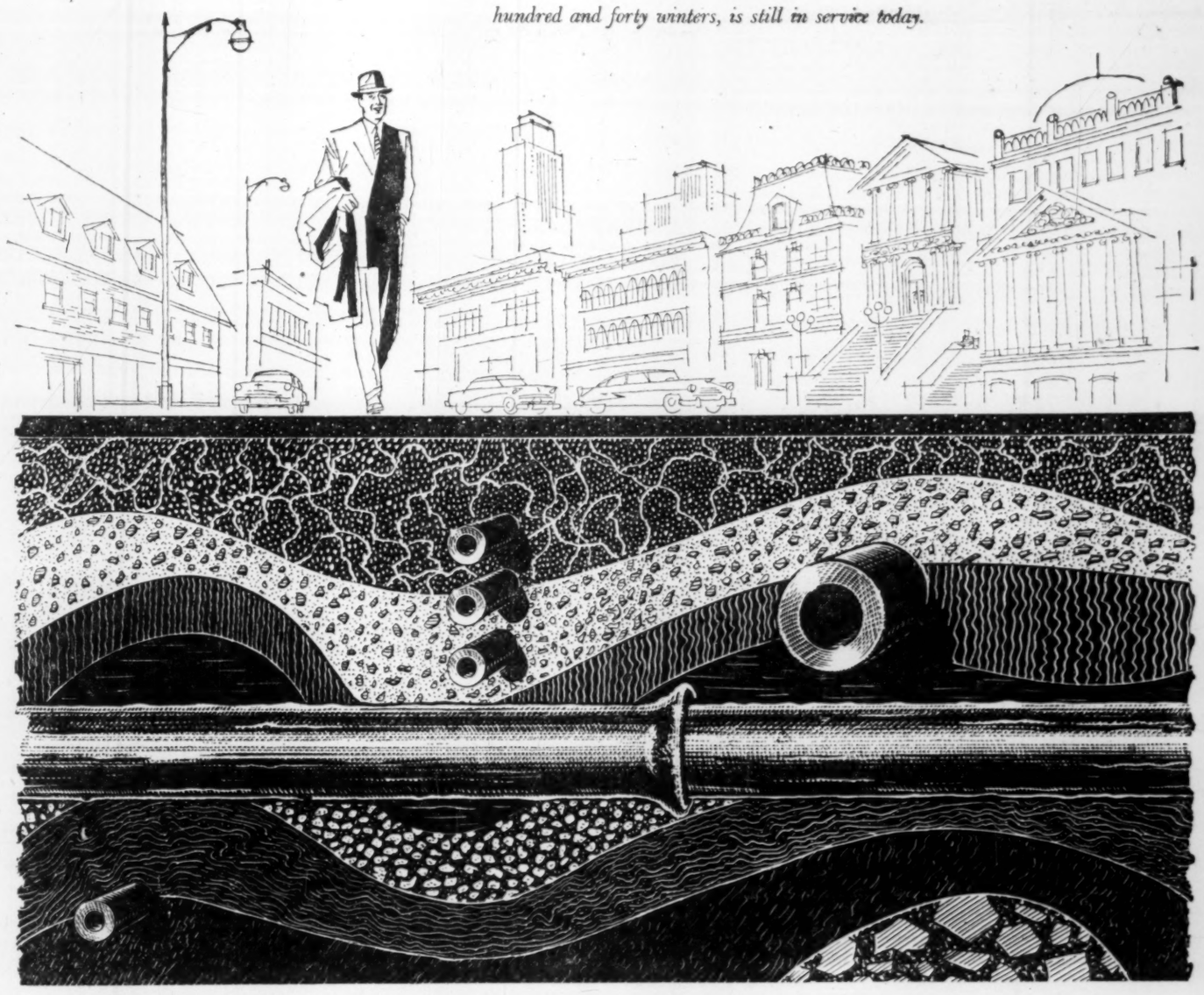
Beneath a street in Montreal lies the oldest cast iron water pipe in North America. It was laid by the good citizens of Montreal in the year 1816; and being the first of its kind, one can imagine more than a few eyebrows were raised at such an innovation. However, this ancient pipe, despite the rumblings of twentieth century traffic and the rigors of one hundred and forty winters, is still in service today.



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LONDON & SCOTTISH Assurance Corp. Ltd.

in its 1955 Annual Statement declares

Total Assets (including Life)	$191,017,828
Total Liabilities	$164,493,476
Surplus (for protection of Policy holders) (Sterling converted at $2.80 per £)	$ 26,524,352

TOTAL ANNUAL INCOME
(in Sterling)

1836	3,072
1875	590,727
1925	6,980,217
1954	30,052,707
1955	33,135,536

Head Office for Canada:
264 Hospital St., Montreal

CANADIAN ADVISORY COMMITTEE

Ross Clarkson, *Chairman*
The Hon. Edouard Asselin, Q.C., M.L.C.
H. Norman Davis
Col. R. Dickson Harkness, D.S.O., M.C.
J. William Horsey
George William Huggett
H. M. Turner
William Petty Walker, O.B.E.

FIRE • CASUALTY • AUTOMOBILE • INLAND MARINE

Market Bid and Ask Quotations

Montreal & Toronto

Closing Quotations June 19

	Bid	Ask		Bid	Ask
xAbbican	47	52	xC PL P	315	320
Abitibi	38¼	39	xC Prosp	510	515
Do pr	24¼	24½	Cdn Salt	21	21½
Acad-Atl	10	10¼	Cdn Tire	111	115
Do A	29¼	30	Do pr	20½	..
Do pr	100¼	104¼	C Util p	100¼	100½
xAcad Ur	17	18	Do 4½% p	..	92
xAcme G	18	19	C Vickers	34¼	34½
Admiral	17¼	17½	C Wall A	12	15
Agnew-S	7½	7¾	Do B	11¼	12¼
Do pr	8	9¼	CWN G p	17¼	17¾
xAjax	75	80	xC Willis	335	375
xAkaitcho	51	55	xCanadus	170	..
xAlba Ex	38	39	xCanarn	..	139
xAlta Dis	175	180	xC-Erin	114	115
Do vt	150	155	xCan-Met	223	225
xAP Cons	41	46	xCanso N	135	150
Algom	17	17¼	xCanso O	203	208
Do deb	96½	97¼	xCariboo	60	67
x Do wts	780	785	xCassiar	840	850
Algoma	101	102	xCastle	395	410
Alumin'm	125	125¼	C Can Inv	28	..
Do 1 pr	22½	24	Do pr	100¼	..
Do 2 pr	50½	51	xCent Ex	445	465
xAm-Lard	16½	18	xC Leduc	410	420
xAmanda	72	73	xCent Pat	132	134
xAm Led	112	114	xCent Porc	14	15
xA Nephe	202	210	xCent'mag	17	18
xAmurex	..	600	xChart O	175	180
xAnacon	290	295	Chart Tr	56	58
xAnchor	19¼	20	x Do rts	305	350
A-Am Exp	13¼	13¾	Chateo	7¼	7½
AC Pulp p	53¼	..	Do pr	6¼	7
A-Cdn Tel	44½	45	Chat-Gai	15¼	15¾
Ang Hur	12½	12¾	xCh Res	450	475
xA Rouyn	136	140	xCheskirk	10	11
Anthes Im	25½	26	xChes'ville	39	40
xApex Res	13½	14	xChib-Kay	66	67
xArcadia	208	210	xChib M	475	490
xArcan	..	48	xChib Ex	110	115
xArea	43	48	xChimo	115	118
Argus	21¼	21½	xChrom	310	325
Do 2.40 p	55	55	Chrysler	61¼	63
Do 2.50 p	42	50	xCirc B	150	300
xArjon	27	28	x Do A	475	..
xAscot	29½	30	xCobalt	68	73
Ashd'n A	13½	15¼	xCoch Wil	86	90
Do B	12¼	13½	Coch-D	18	18½
xAsh T	400	400	Do A	19½	20½
Do A	97¼	99½	Cockshutt	6	6¼
Do B	9½	9¾	xCody-Rec	90	95
Atlan Acc	6	7	Coghlin Co	..	17¼
Do pr	17	19	xCoin L	17	18
Atlas Steel	26	26¼	xC'stream	163	164
xAtlas Yk	22	23	Collwood	12	..
xAtlin-R	13	14	Do pr	11¼	..
xAubelle	16	17	xColomac	16	17½
xAumacho	38½	40	Comb Ent	10¢	10¢
xAumaque	21	22	xCommoll	375	..
xAunor	215	220	xCom Pet	425	460
Auto Elec	12	12½	Conduits	11	12
Do A	9¢	10	Conf Life	120	145
Aut Fab A	5¼	5½	xConiagas	225	230
x Do B	79	80	xConiaur'm	45	47
xAvillabon	11¼	12	xConro	31	32
xBagamac	10	10¼	xC Allenb	16½	18¼
Bailey S A	13¼	13½	Con Baks	6¼	7¼
Do pr	31½	31¾	xC Bellek	65	67
xBanff	235	245	xC Beta G	40	42
xBankeno	33	37	xC C Cad	18	20
Bankfield	12½	13	xC Cordas	26	30
Bk Mont	48½	49½	xC Denis'n	10¢	10¼
Bk NS	53½	54¼	Do wts	380	385
x Do rts	310	315	xC Discov	350	360
B'que Can	41½	42	xC Dragon	36	38
Barb-Ellis	45	..	xC East Cr	67	70
Do pr	19¼	..	xC Fenim	130	135
Barcelona	7¼	9	Do B wts	25	38
xBarnat	63	66	Con Fire	7	..
xBarvue	105	114	xC Gillies	12	14
Do wts	5¼	6	xCG Arr'w	26½	31
xBarymin	240	245	xC Guay'a	30	39
xBase Met	93	94	xC H'well	185	187
xBaska	28	30	xC How'y	410	420
xBata	15	15½	xC Marben	49	58
Ba Innes	..	90	xC Mic M	370	375
Bath Pw A	62¼	63	C M & S	32½	33
Do B	37	41½	xC M'rison	55	56
xB-Duq	225	230	xC Mosher	75	80
Beatty	6¼	7	xC Negus	27	29
xBeauc'ge	225	235	C Nichol	22	29
xBeav Lge	35	36	xC N'land	144	145
Beav Lmb	19½	19¾	xCon Peak	15	16
Do A	20½	21	xC Persid	25	30
Do pr	32½	..	xC Pr'ss A	230	235
xBelcher	249	250	Do B	100	175
Bell Phone	46	46¼	xCons Que	55	60
x Do rts	110	111	xC Red P	33	34
xBellet're	206	225	xC Regc't	81	82
xBevcon	41	42	xC Sann'm	13¼	15
xBibis	11	12	xCon Sud	395	400
xBicroft	260	270	C Textile	450	5¼
x Do wts	115	140	xCon Thor	41	45
xBidcop	88	90	xC Tungs	81	82
Biltmore	5¼	6¼	C West P	11	11¼
Do pr	13	14¼	Con Gas	21¼	21½
xBlack B	72	82	Cons Glass	32	..
Blue Rib	9	10	xConwest	655	670
Do pr	25	32	Copp Cl'k	475	475
xBonville	11¼	12	xCop Clif	395	400
xBordulac	24½	25¼	xCop Cor	193	197
xBouscad	21½	25	xCop'crest	44	46
xBouzan	275	279	xCop-Man	22½	23½
Bowes	18	..	Corby vt	16¼	16½
xBoymar	12	13	Do B	15	16
xBralorne	535	540	Cosmos	12	12½
xBralsm'n	105	110	xCoulee	149	153
Br Cord A	18	18½	xCournor	19	20
Do B	9½	12½	xCowich	198	200
Brazil	6¼	6¾	Craig Bit	6	7
Do pr	..	90	xCrestaur	11½	12½
B Tank pr	48¼	50	xCroinor	21½	22
x Do wts	300	..	Cr Cork	52	53
Bright	12	15½	Cr Trust	23	24
Do pr	19	20	Cr'n Zell	64¼	64½
xBrilund	135	138	xCrowpat	38	40
xBritalta	275	280	Crow's N	192	205
BA Oil	42¼	42½	xCusco	18	18½
BCE 4% pr	88	88½	xD'Aragon	71	74
Do 4½% p	..	46½	Davis A	10½	11
Do 4½% p	46¼	49	x Do B	375	425
Do 4½% p	98¼	100	xDe Cour	63	67
Do 5% pr	51¼	52	Do wts	25	29
BC Forest	15¼	15¾	xDeer H	50	55
BC Pack A	15	15¼	xD'Eldona	24	24½
Do B	12¼	13	xDelnite	70	75
BC Pow	41	41½	xDel Rio	335	340
BC Phone	45½	46¼	xDesmont	42	44
xBroul Rf	152	159	xDetta	14	14½
Bruck A	8½	10	xDev-Led	155	158
x Do B	350	350	Dist Seag	34½	34½
xBrunhurst	9	9½	xDome E	850	870
xBrunsm'n	11¼	12	Dome	14¼	14½
xBrunston	17	17½	Dom Ang	375	..
Brunswick	11¼	11½	Do pr	95	..
xBuffadis	13¼	14	xD Asbes	16	19
xBuff Ank	71	75	D Coal pr	9	9
xBuff Cdn	17	19	D Dairies	7¼	..
xBuff RL	9½	10	Do pr	16	20
Build Pro	34	35	xDiadem	50	54
xBulldog	13¼	14	D Corset	13	13½
Bullochs A	7½	8	Dom Elect	10	11¼
Do B	5¼	5½	Dom Fab	10	11
xBunk Hill	16	16¼	Do 2 pr	..	22½
xBurchell	45	48	D Fndry	29½	..
Burlington	28	28½	Do pr	100½	102
Burns	12¼	13	Dom Ins	200	..
Burrard A	8½	8¾	D Magnes	13¾	13½
xCal Pete	142	143	Dom Scot	27	27½
C'dwell 1 p	21¼	24½	Do pr	48	50
Do 2 pr	12	13	D Steel o	201	201
Cal Ed	27¼	27½	D Stores	37¼	37½
Cal Pow	59	59½	Dom Tar	15¼	15½
Do 5% p	103¼	104½	Do pr	..	21
xCallinan	25	26	Dom Text	7½	8
xCainorth	38	39	Do p	..	142
xCalv'n C	530	555	xD Wool	150	156
Camp Chib	18½	20	xDonalda	57	58
xC'mp RL	555	585	D Ropes B	14¼	14½
xC Bread	300	335	D & M n	140	155
Do B	..	54	D'hue Bro	36	40
Can Cem	30¼	31	Dow Brew	35	36
Do pr	29	30	xDuvan	109	110
CCC Stone	8	8½	xDuvex	32	33
Can Foils	..	13¼	xDyno	108	110
Do A	15¼	16	xE Amphi	9¼	10
C Fndry A	27	..	E Koot	425	..
Do com	16	18¼	xE Malart	182	188
Cl Fndry	33	34	xE Sull	590	595
Do 4¼	103¼	103½	xEast Asb	105	110
Can Life	156	165	xE Metals	78	79
C Machin	10	12	xE Min'g	640	655
Can Malt	55	57	East Steel	5¼	6½
Do pr	23¾	23½	East Theat	26	..
xC Oil L	335	340	Easy Wash	15¼	18½
Do wts	200	222	Do pr	19	19½
C Pack A	37	37½	Econ Inv	37	38
Do B	34¼	35¼	Eddy	55	55½
Can Perm	86¼	87	xElder	44	50
C Safe	..	..	xEldrich	134	135
4% pr	99	99½	xElectra	..	..
xCS Oil wt	80	100	(Can)	98	..
xCS Pete	..	315	Electrolux	122	134
CSL	28¼	30	xEl Pen-R	51	52
Do pr	12½	12¾	xEl Sol	14	15
C Wire A	196	..	xEm Glac	21	22
Do B	18	18½	Emp Life	84	90
xC Ad Oil	62	64	En & Heat	9½	..
xC Astoria	38	41	Equit Life	50	51
xC Atl O	680	700	Erie A	61	..
Cdn Baks	5¼	6	x Do B	265	..
C Bk Com	48½	49	Estabks pr	18	22
Cdn Brew	29¼	29½	xEureka	162	163
Do pr	30	30½	xExcelsior	76	80
xC Br Em	60	63	Fal'bridge	37¼	37½
Cdn Can	40¼	40½	Fam Play	17¼	17½
Cdn Celan	15¾	16¼	Fanny F	22	23
Do $1 pr	18	19½	xFaraday	150	155
Do 1.75p	31½	31¾	Do wts	60	65
C Ch Cell	9¼	9½	xFargo	276	282
C Collieries	9¼	9½	xF'west T	24	25
x Do pr	90	91	Fed Fire	53	..
C C'vert's	425	500	Fed Grain	29	29½
xC Decal w	65	68	Do pr	28½	28½
xC Dev P	770	775	xFed Kirk	35	39
C Dredge	22¼	22¾	xFibre	400	600
xC E Gas	665	675	Do pr	..	54
C Fairbks	27¼	30	Fittings	7¼	..
Do pr	125	..	Do A	10¼	10½
xCF Prod	325	330	Flash F pr	10	..
Do A	8	8¼	xFleet Mf	115	120
Do pr	55	62	Ford	53¼	53¾
CGE	760	975	Do A	122	..
CG Sec A	22	23¼	Do B	..	130
Do B	24	29	Foundat'n	23	24½
xC H'st'd	210	215	xFr'coeur	21¼	22
C Hyd Car	10¼	10½	Fraser	35½	36¼
C Ice Mach	5¼	..	Freiman p	92	95
Do A	11	12¾	xFrobish	450	460
Cdn Loco	28	34	Do debs	85¼	86¼
xC Malart	43	45	x Do wts	2	3
Cdn Oil	23¼	24	xGaitwin	52	53
Do pr	160	161	Gatineau	27¼	28½
Do 5%	104½	..	Do 5% pr	99½	100½
Do 4%	..	99½	Do 5½%p	108¼	112
Do wts '53	8	8½	Geco Mine	18½	19
Do w '58	36½	375	Gen Bake	5¼	5¾
CPR	31¼	31½	G Dynam	58	60
Cdn Pet p	29	29¼	GMC	43¼	43¾

	Bid	Ask		Bid	Ask
xG Pete	520	595	Min Corp	24¼	24½
Do A	500	525	xM Endeav	85	86
GP Mfg A	37	40	xMin-Ore	30	31
Do B	42	..	Mitch & C	34½	..
GS Wares	9	9½	Mod Cont	14	14
Do pr	93½	94	M Cont A	17	17½
xGenex	34½	38	xMogul	300	310
xG Scien	200	215	Molson A	23	25
xG'nt YK	495	500	Do B	22	30
xGlenn Ur	76	79	xMon Knit	5	5¼
xGoldale	32	33	Do pr	44½	..
xGoldcrest	25	26	Mon. Mort	45	..
xG Eagle	11	12	xMoneta	73	75
xG Man	305	315	Mont Loco	16	17
xGF Uran	33	33½	Moore	46	46½
Goodyear	..	140	Do A	704	..
Do pr	50¼	50½	Do B	1080	..
G Mack A	7½	7¾	M'gon & C	..	23½
Do B	8½	9	Do 4½%p	100½	101½
G Pumps	..	16	Mor Brass	8½	8¾
Grafton A	16½	16¾	xMulti-M	124	130
xGr Bousq	25½	26	xNama Cr	115	116
Granby	15¾	16½	Nat Drug	11¼	11½
Gr Toy	35½	49	Do pr	12	12
xGrandine	35	36	xNat Expl	59	60
xGrandoro	50	58	Nat Groc	16½	20
xGranduc	605	615	Do pr	27	27½
GL Paper	50	50½	xN Hos A	425	..
GN Gas	6¼	6½	x Do B	5	5¼
Do pr	..	45¼	Nat Lead	97¼	97½
x Do wts	310	325	xNat Pete	390	410
G Plains D	43½	44½	N St Car	30¼	30½
xG Sw G	315	325	Nat Trust	40½	41
GW Coal A	10¼	10½	xNello	26	29
Do B	9	9	xNes Lab	140	144
Gr West	19	20	xN Alger	32	34
Greening	5	5	xN Athona	69	71
xGreyh'k	56	57	xNew Bid	17	18
xGridoil	..	960	xN Brist	150	152
Guar Tr	20	21¼	xN B Dom	250	252
xGulch	48	50	xNew Cal	73	75
xGulf Ld	15	16	xN Cham	150	160
Gunnar	17¼	18	xN Conc'd	40	46
Do wts	10	10¼	xN Cont	71	73
xGurney	155	300	xN Davies	22½	24
Do pr	23	25	xN Delhi	101	109
xGwillim	15¼	16	xN Dick	168	180
Gypsum n	36½	37	xN Fortun	38	39
Hahn	21½	22¾	xN Gas E	150	155
Do A	16¢	..	xN Goldvu	29	30
xHallnor	325	335	xN Harri'a	26	27½
H Cotton	14	14½	xN H'ridge	67	68
Do pr	98	..	xN Hosco	28½	30
H'd Carpet	8½	8¾	xN Jac'let	196	197
xH'd Rock	14½	15	xN Jason	26	26½
xH-Min'ls	79	82	xN Kelore	17½	20
Hartz A	10	10¼	xNewlund	66	68
xHasaga	18	20	xN Mani	112	115
xH of L	14	15¼	xN Minda	73	74
xHeadw'y	142	144	xN Mylam	15¼	16
xHeath	26	27	xNewnorth	11½	12½
xHees	365	400	xN Rouyn	20	23
Hendshot	28½	29	xN Roy	395	400
Do pr	89	99	xN Senat	10	11
xHeva	11	11¾	xN Sup	245	255
xHigh Cr	40	41	xN Taku	28½	31
xHigh-Bell	79	83	xN Thurb	18	19
xH'wood	38½	39½	xNick R	450	455
H Dauch	45	40	xNipiss'g	380	385
Hi-Tower	7¼	7¾	xNisto	27	28
Holden A	..	300	xN-Acme	128	130
x Do B	..	150	Noranda	57	57¼
Hollinger	26	26¼	xNordon	27	32
Home O A	12½	13	xNorgold	18	20
Do B	11¼	11½	xNorlartic	14	16
H Smith	44	45	xNormet	675	680
Do pr	..	48	xNorpax	138	139
xHoyle	810	820	xNC Oils	540	545
Hud Bay	82¼	82½	Do wts	250	260
xH-Pam	34	37	Do pr	36	38½
Hugh's O A	15	15¼	xNor Inca	9	10
Do B	11¼	..	xN Rank	139	140
Do pr	..	26¢	North Star	14½	15
Hur Erie	36	37¼	Do wts	6¼	6¾
xHusky	925	950	xNth Trin	10¼	11
Do wts	440	460	xNth Can	172	174
Imp Bank	55	55¾	NQ Pow	..	33
Imp Flo-G	25	28¼	Do I pr	50	..
Imp Life	64½	66	NW Util p	88¼	90
Imp Oil	49¾	50	xN'thland	74	75
Imp Tob	11¼	11½	xNorvalie	64	65
Do pr	6¼	6¾	xNudulam	51	52
xInd Lake	22	24	N Star R	65	70
Ind Accep	50¼	51	Oak Wood	6	8
Do $4.50p	96¼	98	xObaska	13	14
Do $2.25p	45	48¼	xO'Brien	88	90
Ingersoll A	8	9¼	Office Sp	15	17½
Inglis	14	14½	xOgama	28½	29
Inland C p	15	15¾	xOil Sel	18	18½
xInspira'n	130	132	xOka R	105	110
Int Bronze	10¼	10½	xOkalta	266	267
Do pr	23	23	xO'Leary	26½	28
I Met A	41¼	41½	xOmnitrans	7½	8
Do pr	101½	102¼	xOB Sup	20	..
Int Mill pr	92	..	Do pr	7	8
Int Nickel	91¾	91¾	xO Jock	255	260
Do pr	128	128¾	Do pr	..	12½
Do $5 pr	6¼	6¾	Do B pr	10¢	11
Int Pete	34¼	34½	x Do wts	78	79
Int Pwr	248	250	Ont Loan	38	39
xI Rarw'k	91	93	Ont Steel	26¼	28
Inter Util	47	47¾	Do pr	133½	..
Intprov BC	12	12¼	xOpemiska	154	155
Intprov PL	38¼	38¾	xOr'ge Cr	385	390
xIrish C'p	281	284	xOrenada	25	26
xIron Bay	350	360	xOrmsby	65	69
xIsotope	150	155	xOsisko	42	45
xJk Waite	20	24	xP Coyle	140	150
xJacobus	31	35	xPac East	12½	13¼
Jam Pub	27	28	Pac Pete	16	16¾
Jam PS	105	..	Page-Hers	86¼	88½
xJaye Ex	102	103	xPamour	54	..
xJeanette	43	44	xPanel	107	106
xJellicoe	25	25¾	xPan West	36	37
xJoburke	21	22	xParamaq	13	14
Johns-M	48	48¼	xParbec	11	12
xJoliet	119	122	xPardee	92	95
xJonsmith	36	37	Parker Dr	5	5¼
Journ Ofit	16	18½	xPater	95	100
xJowsey	115	119	xPathfind	141	143
xJupiter	220	230	xPaymast	31	32
Kelvinator	13½	14	xPeace R	10	10½
xKenville	9	10	Pembina	37½	38¾
Kerr Add	19¼	19½	Do pr	50	50½
xKerr L	55	80	Penmans	24	25
xKeyboy	10	12	Do pr	105	120
xKeymet	66	70	PC Jewel	22½	22¾
xKilembe	365	370	Do pr	99½	100½
Do wts	185	190	xPerron	25	27
xKirk Hud	86	89	xPeruv O	190	200
xKirk M	169	170	xPetrol	143	145
xKirk Tn	26	33½	Photo Eng	43	48
xKroy Oil	230	232	xPick Cr	150	155
Labatt	21½	22¼	xPioneer	200	208
Labrador	20	20½	xPitch-O	12	13
xL Cinch	86	90	Placer	12¾	12½
xL Duf'k	275	280	xPonder	65	70
xL Ling	16½	17	xPoplar O	27	36
xL Nordic	280	285	Powell R	53	54½
xL Osu	22	26	xP Rouyn	50	54
xL Shore	435	440	Pow Corp	59¼	60½
xL Wasa	23	25	xPrair O	475	525
L Woods p	..	150	xPr Bord	18	19
xLa Luz	405	415	Prem Tr	82	86
xLamaq	300	305	xPres E	160	170
Lang	25	..	PRM Inc	38¼	38½
Laura Sec	19¼	..	xPreston	660	675
Laurent A	10	11	Price Bros	96	96½
x Do wts	..	100	xPronto	565	580
L & J A	20½	21¼	xPros Air	175	180
Do B	21¼	..	Prov Trans	13¼	13½
xLeitch	78	80	xProvo G	203	208
xLenc'rt	17	18	xPurdy M	27	29
Lewis Bros	9	10	xQue Ch	219	220
xLexindin	20	22	xQue Cop	220	229
xLib Pete	285	295	xQue Lab	19	19½
xLL Lac	150	160	Que Lith	11	11½
Loblaw A	48½	53	xQ Man	110	120
Do B	70	86	Q Metall	360	365
Do n A	17¼	18	Que Pow	27¼	27½
Do n B	17¼	18	xQueenst'n	23	24½
Do pr	43	43¼	Quemont	26	26½
Loews	120	..	Quinte A	10	12
xLomega	20	20½	x Do com	6	..
xLon Hos	..	300	x Do rts	70	75
Do A	7¼	7¾	xRadiore	119	120
xLJ Pete	17	18	xRainville	140	149
xLorado	120	123	Rapid-Grip	8½	9
xLouvic'rt	23	25	xRare E	340	350
Lw St Law	..	23	xRayrock	162	164
Lowney	20½	25	xReef Ex	12	14
xLyndh'st	149	150	xReeves	216	246
xLynx	11	12¼	Regent	15	16½
xMacassa	197	199	xRenable	245	250
xM'donald	90	95	xRexspar	28	30
xMacfie	15	16	Ren'ds A p	98½	99
xMackeno	45	46	xR Palm	193	194
MacKinn S	42	45	xR Rupun	21½	22
Do pr	100	..	R Silk A	11¼	11½
xMacLeod	125	126	x Do B	350	425
MacMill A	42	..	xR Athab	88	90
Do B	41½	42¾	Robertson	12¾	14
xMadsen	250	255	Do $1 pr	..	21
xMages	140	145	xRobin	300	300
xMagnet	12	13	R Little	10¼	11
Mailman			Do A	13¼	13½
Cum pfd	..	26	xRoche	14	15
Do pr	..	98	xRockwin	31	35
xMalartic	145	150	Rolland P	..	95
xM'east U	23	26	xRowan C	12	13
M Sug pr	..	104	xRoyana	12	14½
M L Gard	20	21	Royal Bk	59¼	59½
M L Mill	8½	8¾	x Do rts	450	455
Do pr	98½	99	R Oak A	11	14½
xMaraigo	31	34	Royalite	13¾	13¾
xMarcon	18	21	Do pr	29	30
xMarcus	10¢	12¾	Russell	11	12
xMarigold	27	30	xRyanor	19	19½
xMaritime	281	288	S L Cem A	171	174
Do A wts	75	84	St L Corp	79½	80¼
Do B w	128	130	Do pr	101¼	..
xMartin	16	18	St Law Fl	..	120
Mass-Har	72	72	xSt Mich'l	40	41
Do pr	94½	94¾	xSan Ant	85	94
xMatatch	60	90	xSand Riv	12	13
Maxwell	71	74	xSapphire	253	251
xMaybr'n	114	115	Do debs	112	116
McBrine p	10¼	11¼	Sar Bridge	14	15½
McCabe A	20	20	xSas Cem	205	215
Do B	18	20	Scarfe A	11¼	14½
McColl	51¼	..	Scu'y-R	209	210
Do pr	98½	99	Scythes	..	16¢
McIntyre	81¢	82½	Do pr	24½	26¼
xMcKenzie	33½	35	xSecur Fr	310	315
xMcMarm	13¼	15	Shawin	84½	84½
xMcWat'rs	44	48	Do A	47¼	48½
xMentor n	60	65	Do B	52	54¼
xMerc Chip	7	10	xShawkey	16	17
xMerrill	310	315	xSheep C	160	165
Merrill Pet	17¼	17½	xSherritt	870	880
xMeta Ur	24½	25	Sher-Wms	40	43
Mex LP	16½	16¾

ANNOUNCEMENT

PAUL E. FLANDERS A. KELVIN ALCOCK

Reginald H. Line, President, Kelvinator of Canada Limited, announced the appointments of Paul E. Flanders as Vice-President in Charge of Merchandising, and A. Kelvin Alcock as Vice-President in Charge of Engineering. Mr. Flanders and Mr. Alcock will be located at the Central Administration Offices of the Company, Kelvin House, Rexdale, Ontario.

ELECTRO VOX

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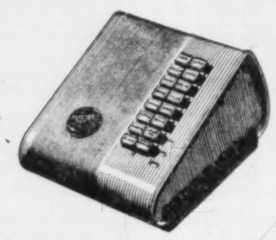

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Market Bid and Ask Quotations

	Bid	Ask
Do B	11¼	12¼
Simon & S	10¼	..
Do 5% p	95½	100
Simpsons	19¼	19¾
xSisco	89	91
xSKD Mf	350	350
Slater n	16	17
Do pr	43¼	..
xSloc'n VR	23	25
S'ville p	50¼	50¼
xSouris	30	33
Southam	..	48
South Can	50	50¼
xSth U O	58	61
xSpan A	185	190
xSpooner	34	37
xStadacon	33	34
St Brands	39¼	39¾
St Pav	40	40½
St Radio	11¼	15
St Brock A	9¼	9¾
Do B	7½	8¼
xStanwell	59	60
xStarratt	11	12
Stedman	23	23½
Steel Can	58¼	58¾
x Do rts	205	210
xSteeloy	11¼	12
Steep Rk	18¼	19
Ster Tr	47	50
xStovel p	400	425
Stuart Oil	14¼	14¾
xSturgeon	83	84
xSud Cont	16¼	18
xSullivan	525	535
S Propane	7¼	7½
Do pr	25¼	..
x Do wts	295	315
Suptest o	19½	20½
Do com	25¼	30
Do pr	100	102
xSurety O	116	121
xSurf In	10	11
Switson	7¼	7½
xSylvan	122	124
Tamblyn	42	42¼
Do pr	46¼	46¼
xTandem	10¼	11
Taylor PC	10¼	10½
Do, pr	11	11
xTeck-H	207	209
xTem'mi	680	700
xTex Cal	91	100
xThom L	155	165
xTiara	26	27
TT Tailors	10¼	15
xTombill	36	40
xTorbit	85	100
To-Dom Bnk	42¼	42¾
Do rts	335	340
Tor Elev	19¼	20¼
T Gen Tr	37¼	37¾
Tor Iron	21¼	23
Do A	21¼	22
Tor Mtge	112¼	..
Tor Sav	36¼	..
xTowag'c	27	27½
T Fin A	41¼	42
Do B	..	42
Do 4½%	..	101
Do 5%	44½	44¾
Do A rts	17¾	..
Do B rts	18¼	..
xTrans C	185	189
xTrans E	218	220
xTr-Ern	41	42
Trans-Mt	64¼	64¾
xTr PPL	16¼	17
xTran Res	40	41
xTrend P	14¼	15
xTriad O	915	920
Tuckett	137	..
Union Acc	5	5¼
Do 2 pr	8	8¼
Un Gas	48	49¼
xU Mng	21	22
xU Asb	710	725
U Corp A	29¼	30
Do B	21¼	25
xU Estella	19	19½
U Fuel A	59	61
Do B	30	32
xUn Ken	610	625
xU Mont	24	25
xUn Oils	235	236
Un Steel	15	15¼
xUpp Can	91	95
xVand'm	385	500
xVandoo	26	29
Ventures	40	40¼
Viau Ltd	63	66
Viceroy A	7¼	7¾
Do B	400	450
xVico	188	190
Vic G Tr	26	..
xViolaMc	215	220
V Dare pr	..	15¼
xVulcan	63	65
Wabasso	16¼	..
Waite Am	14	14¼
Walk GW	69½	69¾
Wat Equip	14¼	15
xWeedon	65	67
Welling'n	78	..
xW Mas pr	..	14
xWespac	23	24
xW Malar	17	18
xW M'gill	142	150
Westeel	18¼	19
xW Ashley	12¼	13
W C Brew	30	32
xW D'lta	178	180
xDo wts	43	45
W Groc A	37¼	38¼
Do pr	28	30
xW Lease	500	..
xW Naco	101	110
xDo wts	26	27
Weston A	21¼	23
Do B	23	24
Do pr	97¼	98
White 1 pr	42	40
White Pas	11¼	12¼
xWillroy	285	289
xWilrich	45	47
xWiltsey	13¼	14
xW'chest'r	10¼	11¼
xW'dward	35	38
Wpg Cent	13¼	14¼
xWood A	355	390
GH Wood pr	96	..
xWool Co	285	300
xWr Har	185	190
xYale Ld	39	40
xYan Can	18¼	19
xYellorex	14	15
xYk Bear	225	228
xY Kn A	150	225
xDo B	36	70
xYukeno	10¼	11¼
Zellers 4¼%	..	48¼
xZenmac	42¼	45
xZulapa	36	42

xQuoted in cents.

Canadian Stock Exchange

	Bid	Ask
Beaubran	29½	30¼
Beld Cort	7¼	8
Do pfd	11¼	12¼
Belg Stores	5¼	..
Do pfd	11	11¼
B'fly Ho	150	350
C Floor B	17¾	..
Cdn Arena	90	..
Cdn P & P	6¾	7¼
C Silk A	425	450
Catelli A	25	..
Do B	38	..
Cinzano A	45	..
Do 5½% pfd	83	..
Cl Neon B	5¾	6
Do pfd	77	..
C Div A	150	..
Do pfd	35	40
Crain, R L	18	20¼
David & Fr. A	49¼	..
Dom Eng'g	22	23¼
E Koot pf	72	..
For Pr Sec	53	58
Freiman 4½% pfd	92	..
Hub Flt	150	..
Do A	19	..
Hydro-El	10	10¼
In Paints A	7¼	..
Do pfd	..	23
Inv Found	41	41
Do pfd	59	60
Lambert A	13	14
Do B	15¼	16
Latonia	18¼	20
Lochab'r A	10	..
Do B	250	..
London Can	7¼	7¾
M'claren P	90¼	92
Melchers D	4	..
Do pfd	12	12
Mersey P	225	250
Mica Co	150	200
Mtl Refrig	36	..
Mt Roy R	11¼	..
Nfld L&P	42¼	42¾
Paton Mfg	9¼	..
Do pfd 7%	22¼	..
Paul S S	5¼	5¾
Pr Crp 1st	47¼	48
Que-Tel	19	..
R&M Bear	18	..
Reitman's	16¼	17
Renold Ch	18	..
Sangamo	11¾	12¼
So Can pf	..	142
Stowell A	14¼	17
Do B	400	..
Suez capita jouis	146¼	..
Tooke Bro	75	110
Do pfd	150	200
Un Amu A	8	10
Do B	7	10
Do pf A	7	10
Un Dist	11¼	14
Waterman	10¼	11
Wilson JC	7¼	8
Windsor H	39	40
Woods Mfg	47	..

MINES

	Bid	Ask
Alta	10	10¼
McIvan'm	15¼	16
Arno	18	18¼
Band-Ore	8¼	12
Barvallee	10	12
Beatrice	11¼	12
Bellech'sse	68	70
Belle-Chib	30	31
Boreal R	17	20
Bouzan	275	284
Calumet U	10	11
Cdn Lith	90	95
Carnegie	21	22
Cartier-Mal	9	9¼
Celta	8¼	10
Cen Man	12	15
Cortez Ex	10¼	11
Duvan	107	..
Fab Metls	32	..
Fontana	13	14
Gui-Por U	12¼	13
Hudson-R	..	23
Iso Uran	25	27
Jardun	25	26
Kontiki L	17	20
Lingside C	17¼	18
Mogador	85	..
Molyb'n/e	122	125
Monpas/	8	..
N Formaq	37	58
N Lafay'te	52	53
N Pacific	155	160
N S'tiago	..	10¼
N Vinray	11	..
Nocana	11	12
Obalski	64	65
Orchan Ur	16	19
Panel C	103	114
Pitt	20	21
Por Prime	17	18¼
Que Smelt	69	70
Red Crest	30	31
Soma-Duv	12	13
Tache Lk	54	55
Tazin	16¼	17
Tiblemont	50	50
Trebor	55	60
Valor Lith	29	..
Virg Min	250	255
Wendell	8	8¼
W'ville	38	38¼

OILS

	Bid	Ask
Altex	23	37
Bonn'lle	50	..
Calalta	130	145
Emp Oil	32	..
Phillips	170	174
Quebec	7	9
W'burne	75	79

Toronto Curb

	Bid	Ask
Andian	6	7¼
Ang Cdn P	26	45
Ang-Nfld	11	11¼
Asbestos	40¼	40¾
B Am Bk	30	31
Brown	21¼	21½
xBulolo	540	550
CD Sug	23¼	24
Can Ving	19	19
C Bronze	30	31¼
Do pr	102	..
C Cottons	..	10½
Do pr	..	8¼
CG Inv	29	29½
C Indust	20¼	20½
CIL pr	90	92
C Ingersoll	97	97
xC M'oni	470	495
CW Lumb	23¼	24
C W'ghse	46¼	47
xCoast Cp	10¼	11¼
C Paper	42¼	43
xDalhou'e	19	22
DeHav	145	..
D Bridge	20	21
D Glass	43	43
Do pr	..	16¼
D Oil Clo	32½	36
Dupont	34¼	35
Do pr	90	93
Gaspe Cop	50	50
Hayes	28¼	30¼
Int Pap	127¼	129
Int Util	47¼	48
IP Util	12¼	13
Langley pr	35	39
Lob Inc	74	75
MacLaren	91	91½
MO Paper	35	35¼
Nlag Wire	48	49
Ogilvie	38	39¼
Do pr	150	160
xPato	570	575
xPend Or	400	410
Price Br	65	67¼
Ridgeway	46½	47¼
Sangamo	11	12¼
xSW Pete	41	50
Third CG I	5½	5¾
Twin City	13¼	..
Univ Prod	62¼	64¼
xYukon C	62	63
Zeller's	34	35

Unlisted Mines, Oils

(By Broker Dealers' Assoc. of Ont.)

Approximate quotations, 3 p.m., June 18, subject to confirmation and change. An asterisk (*) indicates an increase in price; a dagger (†) a decrease in price.

	Bid	Ask
Abenakis	2¼	3¼
Abeta	10	13
Advance	19	22
Alexander	6	8
Ama Kir	6	8
Anabar	6	8
Anamaq	5	7
Anuwon	15	18
Arctic	2¼	3¼
Atl Chib	31	34
Bandwn	85	95
Beacon	8	10
Belfast	9	12
B Grass	*11	13
B McDad	5	7
Bracemq	7	11
Braminc	13	18
Bright RL	3	5
Bruce P	20	25
Brunette	8	10
Camlaren	5	7
Camp I	68	78
Camray	3	5
Can Rad	11	15
Canalask	*32	35
Canuba	65	75
Captain	3	5
Cn Mg	—	150
Cn Aim	10	13
Capital	†115	125
Cn Lith	†95	100
Cn Man	11	13
Caral	40	45
Chellew	†10	13
Clinger	6	8
Clix	8	10
Columbr	7	9
Columind	3	5
Comstock	11	14
C B Ore	37	40
Con Cop	*36	39
Conecho	8	10
C Harper	7	9
Cordell	—	12
Crack S	15	20
Craibbe	22	25
Croydon	5	7
Denlac	2	4
Despina	10	12
Destrad	10	12
Dom Ex	12	15
Dunvegan	11	13
Durham	4	6
East Ind	4	6
Echo Ind	3	5
El Bon	23	25
Farcroft	5	7
Fleetwd	12	17
Forty Fr	30	50
Gan Cop	*10	12
Gateway	9	12
Glenbrk	7	9
Glencona	*7	8
G Harker	13	16
Goldmaq	6	8
Goldyke	4	6
Gov Gold	5	7
Gr Chib	65	75
Guf Por	12	15
HG Yng	22	26
Hornfalt	14	16
Hot Min	16	20
Hucamp	13	15
Independ	11	13
Jardun	24	26
Jean Lk	42	47
Jerome	7	9
Kamlac	9	11
KB Mng	32	38
Kendx P	3	5
Kenog	13	15
Laronge	23	26
Larum	11	14
L Expan	†14	17
L Rnzy	250	260
Lowr Can	2	4
Lun Ec	†52	57
Lynwin	32	35
Magoma	15	20
Main Ok	33	36
Manecho	6	8
Mall RL	8	10
Mar Bird	19	21
Maree	*7	9
Mate Yel	6	8
McCuaig	2	4
McFinly	*28	30
Miles RL	*3	5
Millkirk	25	30
Mindust	140	150
Mt Keno	3	5
Montgr	375	380
Montco	30	35
Murmac	4¼	6
Nat Mal	12	14
New Aug	2	5
N Insco	12	14
New Met	14	17
N Reciwd	8	10
New Wal	4	6
Nickel L	†10	13
Nickel O	—	75
Nicoba	27	30
Nipiron	†23	26
Norbeau	100	120
Norcourt	3	5
Norford	1	3
Normar	2	4
Novel Pr	2	4
Obsk '45	†51	54
Oceanic	*215	230
Oklend	8	10
Ont Rm	10	12
Orchan	17	20
Orofino	20	22
Pacemkr	10	13
Pax nw	70	80
Payne	2	4
Pascalis	†13	16
Peach	1200	1300
Pelangio	2	4
Pickring	†28	32
Picton	23	28
Pine P	†1350	1625
Pitchvein	*9	11
Plum N	55	65
Polestar	35	40
Presdor	2	4
Quejo	13	15
Quest	1	3
Rand M	6	8
Randona	3	5
Red Brk	8	10
Redcon	5	7
Redruth	2	4
Rhyolite	2	4
Richgrp	11	13
Rugged	2	4
Russet	5	6
Salmita	4	6
Sheldon	11	13
St Mary	25	28
Snow L	*8	10
S Dufalt	*27	30
Starlight	10	14
Stanl'h	†310	330
Sunbear	3¼	4¼
Th'crest	23	26
Tower	25	28
U Ridge	†32	37
Valor	*31	33
Vau Duf	†9	11
Vermont	—	20
Viking	13	15
Wadge	6	8
Wesley	9	11
Westall	3	5
West RL	2	3
W Wasa	8	10
Y David	13	15

OILS

	Bid	Ask
Cn Sp	1575	1625
N Ranch	8	9
O Smoky	†8	10
Paig Pete	5	10

Unlisted Mines and Oils

(Compiled from Quotations by G. E. Leslie & Co., Montreal)

Stock	Bid	Of'r
Abeta	11	14
Adnor	3	5
Belmont	..	12
Batmn Bay	80	85
Blue Grass	9	11
Bornite	45	50
Brosn Ch	55	60
Cdn Jav	14.75	15.25
Cent Mng	1.00	..
Chess Uran	..	70
Clinger	5	10
Cont Cop	35	40
Copper Val	40	45
Dawmac	1.25	1.50
Derogan	.5	8
Dupont	40	45
Flu Bar	1.00	1.20
Garland	10	20
Glencona	7	8
Goldmaque	5	7
Imp Minls	10	13
Independ	13	17
Inter Asbes	5	10
Int Lith	1.00	1.25
Kamlac	8	11
Kenmac	15	20
Lake Chib	43	47
King Cop	10	20
Lassie	5	8
Lun-Echo	52	57
Lyndvue	32	37
Main Oka	21	26
Mid Chib	60	70
Miller Cop	32	37
Montgom	4	6
Natl Mal	11	15
New Lorie	19	22
New Mal	2	4
New Augur	5	7
New Pen	4	6
Nipiron	23	26
Norbeau	90	1.30
Oklend	7	10
Ont Nick n	50	58
Orefield	44	47
Ormonte	..	50
Pascalis	13	16
Pennbec	44	49
Power Ur	..	15
Provincial	3	6
Quedon	10	20
Quejo	10	15
Rand Mal	5	7
Red Diam	78	82
Roymont	10	20
St Lawr	50	70
St Jude	20	25
Scott Chib	12	15
Selby Mng	41	47
Sth Bach	44	48
Suzor Cop	30	35
Starlight	10	14
Titanium	95	1.05
Wesley	8	11
Wm Leys	9	12
Yng Dave	12	15

Investment Trusts

	Divd. pd. cents	Bid $	Ask $
All-Can. Comp. Fund	(20.5+)	5.53	5.79
All-Can. Div. Fund	11(17.25)	4.99	5.42
Balanced Mut.	3(15)	5.25	5.77
Can. Invest. Fund	8(34)	9.24	10.13
Canafund	(110)	35.32	37.09
Champion Mut. Fund		5.29	5.81
Com'wealth Inter.	13(28)	8.06	8.84
Corporate Inv.	9(26)	8.78	9.54
Diversified Inc. Shs. B	(12)	4.15	4.50
Dom. Equity Inv.	(42)	14.45	14.75
Grouped Inc. (new)	5(10)	3.91	4.27
Growth Oil & Gas		6.85	7.20
Investors Mut.	7(30)	10.14	10.96
Leverage Fund	10(20)	5.82	6.40
Mut. Ac. F.	(22.53)	6.52	7.08
Mutual Income	6.3(23.42)	5.29	5.74
Resources of Can.	(6)	7.56	...
Sup'vised Amer.	4(31)	6.11	6.17
Sup'vised Executive	(1955) ..	36.03	...
Sup'vised Executive	(1956) ..	29.56	30.86
Sup'vised Gr'th. Fund	(4•)	2.35	2.37
Sup'vised Inc. Fund	4(22)	4.36	4.42
Timed Invest.	(20)	†5.35	*5.36
Trans-Can. A	(83)	27.60	...
Do. B	(96.6)	30.75	...
Do. C	(19)	6.15	6.56

†Less or (•) plus stock exchange commission.
▲Paid or payable in 1954 total paid in 1955 in parentheses.
•Plus stock divd.

Bond Tenders

12 Noon, June 21, 1956, Government of Canada Treasury Bills — Payable Sept. 21, 1956, $130,000,000. Dated June 22, 1956.

New Product News

Fizzical pleasure

The MiraCan is Canco's new, scientifically designed container for carbonated beverages.

Because it's hermetically sealed, this can keeps flavor at its effervescent best. It's lined with a golden double layer that's inert to carbonated beverages.

Many other features make the MiraCan a "miracle of convenience." It's light—easy to carry—easy to open—there's no breakage—no returns. Display? Nothing stacks like MiraCan . . . and the handsome lithographed labels really sing out.

If you have a lagging beverage business . . . the MiraCan may be your answer. It's one more development that has made Canco the leading name in the can-making field . . . another example of Canco ingenuity. Whatever your packaging problem, call Canco first.

American Can Company of Canada Limited

MONTREAL TORONTO HAMILTON CHATHAM VANCOUVER

MiraCan

Bank Staff Changes

Nova Scotia:

W. B. McMILLAN, to be an assistant manager, Queen and McCaul, Toronto.

D. E. McCORMACK, to be accountant, **New** Waterford, N.S.

E. N. MOORE, to be accountant, Broadway and Burrard, Vancouver, B.C.

A. A. SHEPHERD, to be accountant, Santiago de los Caballeros, D.R.

D. W. TAMLYN, to be accountant, Haymarket Square, Saint John, N.B.

M. B. THOMPSON, to be accountant, Richmond Hill, Ont.

L. C. DICKSON, to be manager, 17th Avenue and 38th Street, Calgary, Alta.

R. H. HILL, to be manager, Jacquet River, N.B.

K. J. MACDONALD, accountant, Sudbury, Ont., to be manager, Penetanguishene, Ont.

D. A. WOOD, manager, King and Sherman, Hamilton, Ont., to be manager, St. Andrews, N.B.

D. C. CAMPBELL, assistant accountant, Sudbury, Ont., to be accountant, at that branch.

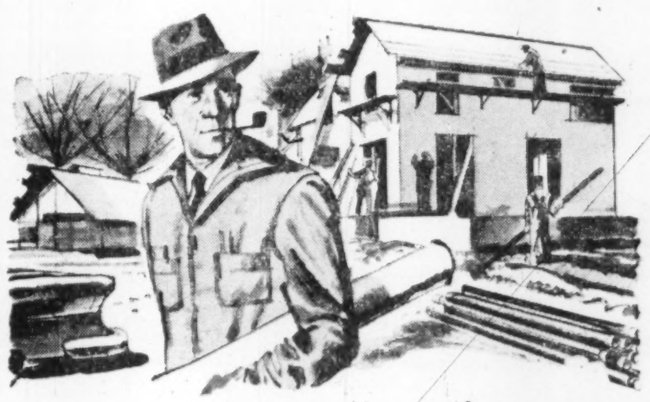
R. A. HUNNIGAR, to be accountant, Hantsport, N.S.

A. D. KOEHN, to be accountant, Red Deer, Alta.

V. D. STOCKTON, assistant accountant, Moncton, N.B., to be accountant, Sackville, N.B.

R. N. THORNE, to be accountant, Acton, Ont.

C. FORTUNE, to be assistant accountant, Sudbury, Ont.



ask the contractor

he uses GENUINE NO-CO-RODE* SEWAGE AND DRAINAGE PIPE

*Trade Mark

here's why

- The long, 8-foot lightweight lengths are easy to handle and install.
- Root-proof joints are made with just a few taps of the hammer.
- Installs fast since the application of sealers, caulking or other compounds is not required.
- Strong, tough and flexible, No-Co-Rode withstands earth settlement—traffic tensions.
- No-Co-Rode Pipe resists acids and alkalies in sewage water to insure lifetime service.

New home building and modernization are going on at a fast pace these days, and products like No-Co-Rode Pipe help speed up work and provide years of trouble-free service. That's why you'll find No-Co-Rode Pipe in such widespread use.

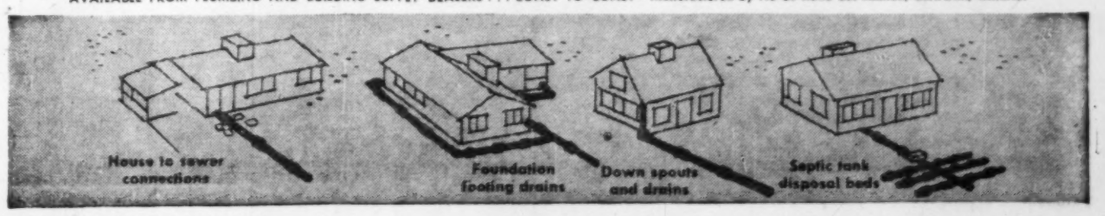
For house to sewer connections, septic tank connections, storm drains and other underground non-pressure lines, contractors install NO-CO-RODE Root-Proof Pipe.

For septic tank disposal beds, foundation drains and drainage of lawns and fields, they use NO-CO-RODE PERFORATED PIPE.

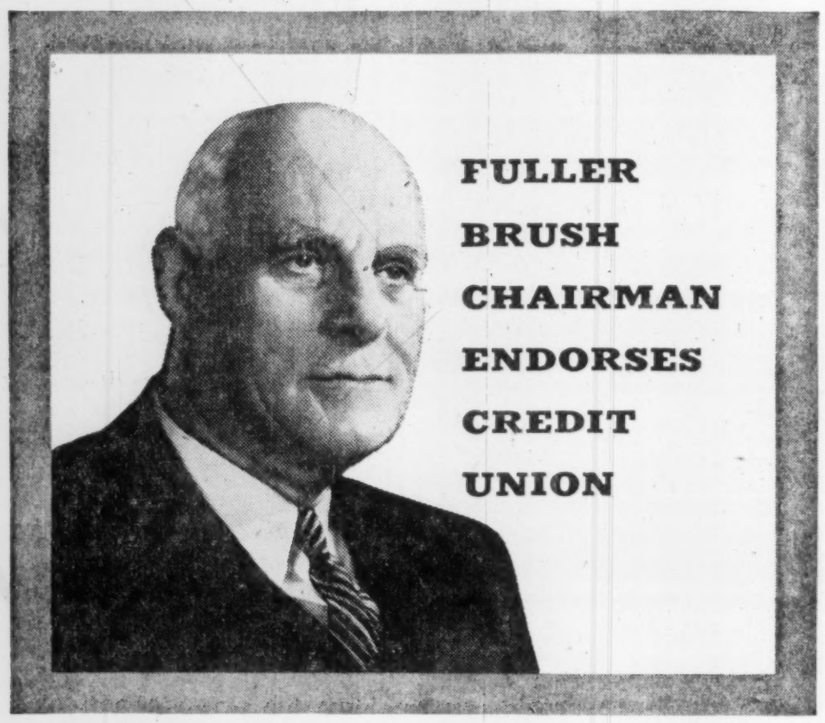
Another dependable product of

Alexander MURRAY & Company LIMITED

AVAILABLE FROM PLUMBING AND BUILDING SUPPLY DEALERS . . . COAST TO COAST—Manufactured by No-Co-Rode Co. Limited, Cornwall, Ontario.



FULLER BRUSH CHAIRMAN ENDORSES CREDIT UNION



Here's what A. C. Fuller, Chairman of the Board of Directors, Fuller Brush Company Limited, says about Credit Union . . .

"Fuller Brush Company heartily endorses its Credit Union which has taught many of its employees to save money and has, at the same time, enabled them to secure loans under favourable terms."

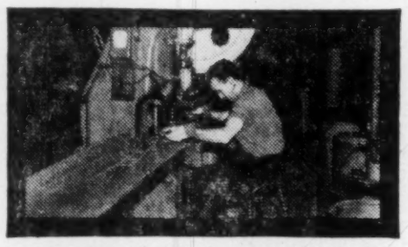
EMPLOYEES of the Fuller Brush Company Limited are indeed proud of their credit union. And well they might be. Since it was organized in December, 1953, its members have helped each other to enjoy such things as home improvements, medical care, new cars, even vacations, with loans totalling well over $63,000. $99,630 has been collected from members during the two-year period, and dividends totalling slightly over $1,000 have been paid to them.

This clearly illustrates how a credit union encourages men and women to save together for greater financial security and peace of mind. Through their credit union, they are able to enjoy the advantages of low-cost loans from their pooled savings—often with added life insurance protection at no extra cost. This is the true spirit of the credit union movement . . . the self help, non-profit organization that daily fills, in a friendly way, the financial needs of its many members.

Today, credit unions are all over the Western Hemisphere. There are nearly 21,000 of them in all, serving some 10,000,000 people. Management endorses credit unions, because they free workers of financial worries, enable them to keep a clear mind for doing a better job. And wherever there are credit unions, pay advances and wage garnishments are practically unheard of.

You can start enjoying the financial security, the convenience a credit union offers. To form one, all you need is a group of 50 or more sharing some common interest—employment in the same company, for instance. Those wishing to participate, form and run their credit union themselves—under government examination—and every member benefits.

If you'd like to see a credit union in your company, why not do something about it right now? Begin by dropping a line to Credit Union, Dept. P10, Box 65, Hamilton, Ontario, for full information —today!



A fine member of the Fuller Brush team, Wally Ridge is a Punch Press Operator. When Wally found the house he wanted for his family, he also found his team-mates in the credit union ready and willing to provide him with a low-cost loan, which enabled him to buy the house. This kind of fellowship is enjoyed by credit union members everywhere.

DIVIDEND NOTICES

dividend notice

Notice is hereby given that a Dividend at the rate of Thirty-two and One-half cents per fully paid share in the Capital Stock of the Bank has been declared for the quarter ending July 31st, 1956, payable at the Head Office and Branches of the Bank on and after August 1st, 1956 to shareholders of record at the close of business on June 29th, 1956.

Subscribers to new shares are reminded that they will rank, for the purposes of this Dividend, in the proportion that the amount paid on such new shares on or before June 29th, 1956 bears to the subscription price of $32.00.

By Order of the Board.

A. T. Lambert
General Manager

THE TORONTO-DOMINION BANK
THE BEST IN BANKING SERVICE

MINDUSTRIAL CORPORATION LIMITED

DIVIDEND NO. 2

Notice is hereby given that a quarterly dividend of 2½ cents per share on the issued Capital Stock of this Company has been declared payable July 3, 1956, to shareholders of record June 25, 1956.

By Order of the Board.
R. J. BEHAR,
Secretary-Treasurer.

Toronto, Ontario,
June 18, 1956.

Ash Temple LIMITED

Notice is hereby given that the following dividends have been declared payable July 1st, 1956, to shareholders of record at the close of business on June 18th, 1956.

Quarterly Dividend #23 of 1¼% on the 6% Cumulative Redeemable Class A Preference Shares.

Dividend #2 of sixteen and one-quarter cents (16¼c) per share on the 6½% Cumulative Redeemable Sinking Fund Class B Preference Shares.

By Order of the Board.
E. M. FARNCOMB,
Secretary-Treasurer.

Toronto, Ontario,
June 13th, 1956.

DOMINION FABRICS LIMITED

DIVIDEND NOTICE

Notice is hereby given that a dividend of 37½c per share has been declared on the Second Cumulative Participating Preference shares; and a dividend of 10c per share on the Common shares of the Company, for the quarter ending July 31, 1956, payable August 1, 1956, to shareholders on record July 16, 1956.

By Order of the Board.
WILLIAM CAMELFORD,
Secretary.

PROPANE CREDIT CORPORATION LIMITED

DIVIDEND NO. 3

A dividend of 4½c per share to Common and Class "A" shareholders will be paid June 15th, 1956, to all shareholders of record as of March 31st, 1956.

By Order of the Board.
F. J. SIBBALD,
Secretary.

Edmonton, Alberta,
May, 1956.

PROPANE CREDIT CORPORATION LIMITED

DIVIDEND NO. 4

A dividend of 1½c per share to Common and Class "A" shareholders will be paid July 15th, 1956, to all shareholders of record as at June 30th, 1956.

By Order of the Board.
F. J. SIBBALD,
Secretary

Edmonton, Alberta,
May, 1956.

GENERAL PRODUCTS

MFG. CORPORATION LIMITED

Dividend Notice

Notice is hereby given that a stock dividend at the rate of one share of 3% non-cumulative redeemable Second Preference Stock having a par value of $1.00 per share for each Class "A" and/or Class "B" share of the Company has been declared payable July 13, 1956, to the holders of Class "A" and Class "B" shares of the Company on record at the close of business June 29, 1956.

By Order of the Board.
D. G. WALLACE,
Secretary-Treasurer.

London, Ontario,
June 12, 1956

CANADIAN PACIFIC RAILWAY COMPANY

DIVIDEND NOTICE

At a meeting of the Board of Directors held today a dividend of seventy-five cents per share on the Ordinary Capital Stock was declared in respect of the year 1956, payable in Canadian funds on August 1, 1956, to shareholders of record at 3.30 p.m. on June 22, 1956.

By order of the Board,
FREDERICK BRAMLEY,
Secretary.

Montreal,
June 11, 1956.

THE EASTERN TRUST COMPANY

221st Consecutive DIVIDEND

Notice is hereby given that a quarterly dividend of 2½% (25c per share) has been declared on the paid-up Capital Stock of the Company (par value $10.00 per share), for the quarter ending June 30th, payable July 3rd, 1956, to shareholders of record as at the close of business June 20th.

By Order of the Board.
E. G. DEWLING,
Secretary.

THE CANADIAN BANK OF COMMERCE

DIVIDEND NO. 278

NOTICE is hereby given that a dividend at the rate of thirty-five cents per fully-paid share on the outstanding Capital Stock of this Bank has been declared for the quarter ending July 31, 1956, payable at the Bank and its branches on August 1, 1956, to shareholders of record at the close of business on June 30, 1956.

By Order of the Board.
N. J. McKINNON,
General Manager.

Toronto, May 25, 1956.

THE BANK OF NOVA SCOTIA

DIVIDEND NO. 347

Notice is hereby given that a Dividend of forty-five cents per share on the paid-up Capital Stock of this Bank has been declared for the current quarter to shareholders of record of June 30th, 1956, and that same will be payable on and after Wednesday, the first day of August, 1956, at any of the offices of the Bank in Canada.

By order of the Board.
F. W. NICKS,
General Manager.

Halifax, N.S., June 12th, 1956.

BRITISH COLUMBIA TELEPHONE COMPANY

ORDINARY DIVIDEND

Notice is hereby given that a quarterly dividend of 50c per share has been declared on the outstanding Ordinary Shares of the Company, payable on July 1st, 1956, to shareholders of record at the close of business on June 15th, 1956.

By Order of the Board.
R. W. J. ANGUS,
Secretary.

Vancouver, June 8th, 1956.

WOOD ALEXANDER LIMITED

Notice is hereby given that a regular quarterly dividend of 1½% per share has been declared on the 6% Cumulative Redeemable Sinking Fund Preference Shares, payable July 3rd, 1956, to shareholders of record as at close of business June 15, 1956.

By order of the Board.
J. I. WHITFORD,
Secretary-Treasurer.

McCOLL-FRONTENAC OIL COMPANY LIMITED

"COMMON STOCK DIVIDEND NO. 70"

NOTICE IS HEREBY GIVEN that a Dividend of 35 cents per share has been declared on the no par value common stock of McColl-Frontenac Oil Company Limited for the quarter ending June 30, 1956, payable August 31, 1956 to shareholders of record at the close of business on July 31, 1956.

By Order of the Board,
FRED HUNT, F.C.I.S.,
Secretary.

N. SLATER COMPANY LIMITED HAMILTON-CANADA

DIVIDEND NOTICE

NOTICE IS HEREBY GIVEN that a dividend of .53c per share has been declared on the outstanding Preferred Stock of the Company, payable July 16th, 1956, to shareholders of record at the close of business on June 29th, 1956.

NOTICE IS HEREBY GIVEN, ALSO, that a quarterly dividend of .20c per share has been declared on the outstanding Common Shares of the Company, payable August 1st, 1956, to shareholders of record at the close of business on July 11th, 1956.

By Order of the Board.
E. GARSIDE,
Secretary.

SUPERTEST PETROLEUM CORPORATION, LIMITED

NOTICE OF DIVIDENDS

5% Preference Shares

A quarterly dividend of $1.25 per share upon the outstanding 5% cumulative redeemable sinking fund preference shares of the par value of $100 each in the capital stock of the Corporation has been declared, payable July 15th, 1956, to shareholders of record at the close of business June 21st, 1956, such dividend being at the rate of 5% per annum for the period from April 15th, 1956, to July 15th, 1956.

Ordinary Shares

A half-yearly dividend of 40 cents per share has been declared on the ordinary shares of the Corporation for the half-year ending June 30th, 1956, payable July 15th, 1956, to shareholders of record at the close of business June 21st, 1956.

Common Shares

A half-yearly, dividend of 4 cents per share has been declared on the common shares of the Corporation (as such common shares exist after the subdivision thereof on a 10-for-1 basis by supplementary letters patent issued to the Company dated March 1st, 1956) for the half-year ending June 30th, 1956, payable July 15th, 1956, to shareholders of record at the close of business June 21st, 1956.

By Order of the Board.
C. C. COPEMAN,
Secretary.

London, Ontario,
June 11th, 1956.

Vickers of U.K. Names Directors To Canadian Firm

MONTREAL (Staff)—Reflecting the recent acquisition of majority control in Canadian Vickers Ltd., by Vickers Ltd., England, four new directors were elected at the annual meeting of Canadian Vickers held this week.

Three of the new directors represent the British interest in the company.

They are:

Viscount Knollys, chairman of Vickers Ltd., London, Eng.;

Maj. Gen. Charles A. L. Dunphie, a director of Vickers and chairman of its chief operating subsidiary Vickers-Armstrong Ltd.;

Lewis J. B. Forbes, Toronto, president of Pilkington Bros. (Canada) Ltd. Mr. Forbes is president of a number of other Canadian firms as well as president of the Canadian Association of British Manufacturers and Agencies. He was elected vice-president of Canadian Vickers Ltd.

The fourth new member of the board is J. H. Hatcher, secretary of Canadian Vickers. He replaces H. U. Shipley, Toronto, who resigned earlier.

Stepping down from the board were C. A. Cather and C. G. Hoyt, both of Toronto and L. P. Stack of Boston, Mass. It is understood that these directors were among the group from whom English Vickers acquired stock in the company.

DIVIDEND NOTICES

ATLAS STEELS LIMITED

Notice is hereby given that a dividend of twenty-five cents (25c) per share on the Common No Par Value Shares of the Company has been declared and the same will be payable on the first day of August, 1956, to Shareholders of record at the close of business on the third day of July, 1956.

By Order of the Board.
A. G. HOWEY,
Secretary.

Dated at Welland, Ontario,
June 15, 1956.

INTERNATIONAL PAINTS (CANADA) LIMITED

DIVIDEND NOTICE

A half-yearly Dividend of 3% for the six months ended March 31, 1956, has been declared on the 6% cumulative participating preferred stock of the Company, payable on June 26, 1956, to Shareholders of record at the close of business on June 12, 1956.

By order of the Board.
D. R. W. McKEAN,
Secretary-Treasurer.

Montreal, June 4, 1956.

NOTICE OF DIVIDEND

John Labatt Limited

Notice is hereby given that Dividend No. 46 of thirty cents per share has been declared on the outstanding common shares without nominal or par value of the Company, payable on the second day of July, 1956, to shareholders of record at the close of business on the fifteenth of June, 1956.

By Order of the Board:
ALEX S. GRAYDON,
Secretary.

London, Ontario, June 4th, 1956

THE CONSOLIDATED MINING AND SMELTING COMPANY OF CANADA LIMITED

DIVIDEND NO. 102

NOTICE IS HEREBY GIVEN that a Dividend of Forty cents (40c) per share, and an extra distribution of Forty cents (40c) per share, on the paid up Capital Stock of the Company, have this day been declared for the six months ending the 30th day of June, 1956, payable on the 16th day of July, 1956, to shareholders of record at the close of business on the 22nd day of June, 1956.

By Order of the Board.
L. O. REID,
Secretary.

Montreal, P.Q.,
June 14, 1956.

DOMINION GLASS COMPANY LIMITED

Notice is hereby given that a dividend of one and three-quarters percent (1¾%) has been declared on the PREFERRED STOCK of the Company for the quarter ending the 30th day of June 1956.

Notice is also hereby given that a dividend of Thirty-Five Cents (35 cents) per share has been declared on the COMMON STOCK of the Company for the quarter ending the 30th day of June 1956.

The above dividends will be paid on Monday, the 16th day of July 1956, to shareholders of record at the close of business Thursday, the 28th day of June 1956.

By Order of the Board.
T. B. KING,
Secretary.

Montreal, 29th May, 1956.

The 110th consecutive quarterly
GUARANTY TRUST
Company of Canada
DIVIDEND
17½¢ a share—rate of 7% per annum payable July 16, 1956 to shareholders of record June 30, 1956
J. WILSON BERRY
President and General Manager

Market Comment

What stocks and bonds are doing and what prominent observers say

Markets were pursuing their sideways direction this week with daily stock turnover slipping down to lower levels. There is a strong "wait and see" attitude in the marketplace these days. The several bearish developments have not been sufficiently depressing to cause traders to unload stocks.

On the other hand, the bullish factors have not been convincing enough to bring strong new buying power into the market at this time.

Big news on the uranium front has been the merger of three more likely Blind River, Ont., uranium producers, Panel Cons., Spanish-American and Lake Nordic into what will possibly be the biggest uranium operation in the world — that of Norspan Uranium, controlled by the big U. K. Rio Tinto interests. With a likely combined daily milling rate of around 9,000 tons, Norspan could be the largest uranium producer in the world.

* * *

DON J. ROGERS; Equitable Securities Canada (Toronto)

The recent decline in American and Canadian stock markets has been a healthy one from a technical standpoint. Prior to the reaction there had been no buildup of a "top" which would indicate any large scale shifting of stocks from "strong" to "weak" hands. Bull markets are characterized by reactions from time to time which are swift, sharp and usually of short duration. The present one is no exception.

There have been a number of contributing factors to weakness in our own market. Money has been tighter, and many companies have been forced to come to the market for funds almost instantaneously. Rights offerings of three of our large banks, a trust company, Bell Telephone, Steel of Canada, will account for close to $150 million of new money. The terms of the rights are so attractive that most investors take the opportunity to acquire additional shares, thus temporarily detracting some interest from other equities. Furthermore, the high yields on the many new preferreds have attracted a great deal of money formerly invested in low-yielding common stocks, most of which showed handsome profits.

A workout period in present price ranges is indicated for many of our stocks. The promise of a continued high level of business, even if somewhat below peak levels, and the general realization that "creeping" inflation is still with us, should combine shortly to restore investor confidence in our equities, particularly selected oils, steels, papers and other mediums carrying a growth rating.

* * *

G. T. GAYFORD; E. H. Pooler & Co. (Toronto)

The recent market repercussion to medical-political news and its outstanding rebound has been apparent to all and is a definite proof of the great strength underlying the market as a whole.

While there has been a slight leveling off after the sharp recovery, a much more confident tone prevails, and despite many sources predicting a sideway movement for the next few months, a base appears to have been established from which a resumption of the upswing could commence, the past sell-offs really amount to nothing more than long overdue corrective movements in an outstanding bull market.

* * *

MAURICE FORGET; Forget & Forget (Montreal)

Quite a few speculators and just as many bargain hunters have been wondering what to do about the market at current level.

Some people have been looking for the causes of the general downfall of prices, others have been asking themselves if now is the time to buy or should one wait for lower prices.

Evidently, credit restrictions by money lenders and political uncertainty in the U. S. A. are at the basis of it all.

The new policy of money-lenders, partially aimed against inflation, has been severely criticized, but generally speaking seems justified. This policy is strict but should be readjusted in time.

Canada is rapidly expanding. New industries appear all over the country. Older ones are doubling in size. Governments are launching big enterprises. The whole country is buzzing with activity.

In these times, however, it often happens that a point of saturation is reached or that the larger producing capacity must be properly digested. This is what is actually happening and one should be patient and not worry unduly.

The better part of Canada's economic progress is ahead of us. One should analyze it carefully and in so doing one will realize that selective buying at today's prices should pay off in the not so distant future.

* * *

ANDRAS, HATCH & McCARTHY (Toronto)

The U. S. economy has begun to show a number of weak spots such as the motor industry, textiles, increasing inventories over a period when sales have leveled off, etc. The Canadian economy on the other hand has continued to be extremely buoyant in most sections, including the motor industry.

Large capital expenditures currently planned by business in Canada and the United States will contribute much to maintaining a high level of personal income, even should there be some slackening off in economic activity.

Because of the squeeze on profit margins through continually rising costs of operation we believe that this high level of expenditure will continue for some time to come.

ANGLO-CANADIAN TELEPHONE COMPANY

Class A Dividend Notice

NOTICE is hereby given that a dividend of One and One-half percent (1½%) has been declared on the Class A Stock of the Company, payable September 1, 1956 to Stockholders of record at the close of business on August 10, 1956.

By Order of the Board,
CAMERON HOUGH,
Secretary.

Montreal, June 8, 1956.

ANGLO-CANADIAN TELEPHONE COMPANY

Preferred Dividend Notice

NOTICE is hereby given that a dividend of One and One-Eighth percent (1⅛%) has been declared on the 4½% Cumulative Preferred Stock of the Company for the quarter ending July 31, 1956, payable August 1, 1956 to Stockholders of record at the close of business on July 10, 1956.

By Order of the Board,
CAMERON HOUGH,
Secretary.

Montreal, June 8, 1956.

(Advertisement)

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Short Position Falls on TSE

Semimonthly report of short positions of the Toronto Stock Exchange at May 31, eliminating odd lots on members' books, aggregated 711,185 shares of 207 issues, compared with 793,085 shares of 191 issues on May 15.

Among the changes were:

Stock	Shares	Stock	Shares
Bell	—375	Algoma	—200
Bordulac	—32,100	Duvan	+14,500
B. A. Oil	+100	Kroy	+49,900
CPR	+600	Lomega	—21,500
Cons. Hall	—19,300	MacM Bloed.	+150
Dist Cor-Seag	+100	OgmaRock	+14,000

Here are the short positions in detail:

Algom	2,600	Irish Copper	500
Algom Wts	765	Iron Bay	100
Aluminium	50	Jaye	5,200
Am. Leduc	3,800	Joliet	1,500
Am Nepheline	1,000	Kerr-Add	500
Anacon	300	Kirk-Hud	2,000
Anglo Rouyn	200	Kroy	64,400
Apex	1,000	Labrador	100
Arjon	1,500	L Dufault	17,600
Asbestos	200	L Nordic	2,400
Atlas Steel	100	Leitch	500
Aumaque	2,500	Liberal Pete	1,400
Bagamac	1,000	L L Lac	600
Bailey-Sel	4,500	Lorado	2,600
Banff	1,900	Lomega	1,500
Barvue	1,200	Lyndhurst	8,800
Barvue Wts	6,260	Macassa	500
Base Metals	8,000	Mackeno	300
Baska	500	MacMillan B	150
Beattie-Duq	60,800	Maralgo	2,000
Belcher	2,600	Maritimes	700
Bell Phone	1,075	Marit A wts	975
Bell Phone rts	100	Martin McN	500
Bidcop	11,800	Massey-H-F	2,500
Bordulac	28,400	Maybrun	11,600
Bouzan	5,200	McKenzie	1,500
Brilund	500	Merrill Is	300
B. A. Oil	100	Midrim	3,400
Broulan	100	Mill City	500
Brunhurst	5,500	Milliken	2,400
Brunsman	500	Nat Explor	700
Brunston	1,000	Nat Pete	400
Burchell	700	Nat Stl Car	525
Calaitta	500	Nesbitt	3,200
Calgary & Ed	300	N Bidlamaque	500
Camp Chib	800	New Bristol	2,000
Can S Pete	200	New Brit Dom	100
Cdn Devonian	200	N Dickenson	1,900
CPR	700	New Fortune	1,000
C Petrofina Pr	570	N Harricana	500
Canadiusa	100	N Highbridge	2,000
Can-Met	300	N Jaculet	7,300
Cassiar	500	New Jason	8,000
Cent Leduc	1,300	Newlund	600
Centremaque	500	N Manitoba	5,000
Chem Res	7,000	N Royran	3,700
Chib Kayrand	1,000	N Superior	200
Chimo	1,000	Nickel Rim	4,900
Coldstream	1,500	Nisto	7,500
Colomac	500	Noranda	750
C Denison	3,100	Normetal	1,000
C Denison wts	3,400	Norpax	7,100
C Hallwell	21,400	N Cdn Oil	800
C Howey	5,800	N Rankin	5,000
Con Smelters	480	O'Brien	1,000
C Nicholson	6,000	Ogama	14,000
C Northland	1,000	Oil Select	1,000
Con Paper	50	O. J. Club	1,500
C Sud Basin	900	Opemiska	4,800
C Tungsten	1,500	Pac Eastern	1,000
Copper Cliff	2,000	Pac Pete	200
Coppercorp	3,900	Pardee	100
Corby Vot	300	Pathfinder	500
Coulee	3,000	Paymaster	500
Cusco	500	Peruvian	200
D'Aragon	500	Petrol	1,400
Del Rio	100	Pickle Crow	500
Dist Seag	400	Powell River	50
Dom Stores	50	Provo	1,300
Dom Tar	200	Que Chib	17,200
Duvan	33,700	Que Copper	4,100
Dyno	1,600	Quemont	1,100
E Sullivan	200	Radiore	400
East Metals	500	Rare Earth	17,900
East Mining	400	Rayrock	1,800
El Pen-Rey	1,000	Rio Rupununi	800
Eureka	4,200	Sapphire	600
Falconbridge	100	Scurry	300
Faraday	300	Shawkey	1,000
Frobisher	900	Sherritt	5,500
Frobish wts	4,500	Silanco	1,000
Glenn	8,400	Silver Mill	1,200
Goldale	500	Starratt	1,000
Goldcrest	500	Steep Rock	5,300
Golden Man	1,000	Sturgeon Riv	1,000
Grandines	300	Surf Inlet	2,500
Granduc	200	Teck Hughes	400
G L Paper	500	Temagami	500
G S Grass	13,400	Thomp-Lund	5,600
Greyhawk	3,500	Trans Empire	300
Gulch	300	Triad	900
Gunnar	1,600	Un Asbestos	41,900
Gypsum	25	Un Keno	1,200
Harrison Min	2,600	Ventures	300
Head of Lakes	1,000	Vico	600
Headway	6,300	Violamac	3,500
Heath	14,000	West Decalta	500
Highwood	500	Walker G & W	300
Hoyle	300	Weston A	40
Imp. Oil	2,400	Weston B	40
Indian Lake	6,500	Winchester	1,000
Ind. Accept	200	Yellorex	1,000
Inglis, John	300	Zenmac	9,000
Int Nickel	430	Total	711,185

Municipal Bonds

June 19, 1956

	Coup.	Matur.	Bid	Ask	Yld.
	%		$	$	$
Calgary	3½	'69	91	93	4.20
Edmonton	3½	'69	91	93	4.20
Halifax	3½	'66	92	94	4.25
Hamilton	3	'67	89	91	4.05
Montreal	3	'70	83½	85½	4.35
Moose Jaw	3½	'60	96	97	4.20
Ottawa	3¼	'68	92	94	3.90
Regina	3	'64	90	92	4.15
St. John, N.B.	3½	'65	91½	93½	4.35
Toronto	3	'68	88	90	4.05
Vancouver	3¾	'69	93	95	4.25
Victoria	3¾	'68	93	95	4.30
Windsor	2¾	'75	78	80	4.25
Windsor	3½	'75	87¾	89¾	4.25
Windsor	2½	'75	74½	76½	4.25
Winnipeg	3	'69	87	89	4.19

Commodities

	Latest week	Previous week	Same week last yr.
Cattle	$20.47	$20.50	$19.25
Hogs	25.94	25.37	27.50
Copper, lb.	.46	.46	.36
Sugar, raw, lb.	.0553	.0545	.0553
Coffee, lb.	.57¾	.56¾	.54
Hides	.15½	.15½	.12½
Weekly Commodity Indices			
Dow Jones	153.33	150.72	154.18
U. S. Labor	114.2	114.3	110.3
Monthly Commodity Indices			
Canada (D.B.S.)			
Retail (May)†	116.6	116.6	116.4
W'sale (Apr.)	224.5	223.3	218.5
C. F'm Pro. (Apr.)	200.4	197.5	216.1
U. S. (Apr.)	112.8	•112.4	110.0
Gt. Brit. (Dec.)	348.7	•348.1	335.5

Note: †Cost-of-Living Index Revised to the Base of 1949=100.

Base of price quotations is as follows: Cattle-Steers, good up to 1,000 lb., to price Toronto. Copper-electrotypes, New York Coffee No. 4 Santos, Spot Raw Sugar 96 degrees centrifugal c.i.f.

•Revised

Canada Packers Plans Addition to Maine Plant

Canada Packers Ltd., Toronto, will erect a $150,000 addition to its fertilizer plant at Presque Isle, Maine.

Company is buying several acres of land for addition to cope with much greater operations.

Canada Packers also has fertilizer plants in Toronto, Welland and Chatham, Ont.; Montreal and Quebec City; Saint John, N.B.; Port Williams, N.S.; and Summerside, P.E.I.

INTERNATIONAL UTILITIES CORP. during May converted 16,495 $1.40 cumulative convertible preferred shares into same number of common shares, and issued an additional 585 common shares under employees stock option plan. Now 87,706 preferred shares and 1,128,715 common shares outstanding.

Grain Prices

Winnipeg Futures

Week to June 18, 1956

Crop Year from Aug. 8, 1955 High	Low		High for week	Low for week	Close June 18
		Oats—			
.80¾	.68	July	.80¾	.79¾	.79¾
.78¾	.69¾	Oct.	.78¾	.76¼	.76¾
.74¾	.70¾	Dec.	.74¾	.72¾	.72¾
		Barley—			
1.13¾	.93¾	July	1.08¾	1.04¼	1.05¼
1.09	.94¾	Oct.	1.06¼	1.02¾	1.03¼
1.03¾	.97¾	Dec.	1.01¾	.99¼	.99
		Rye—			
1.31¼	.96¾	July	1.21¾	1.17	1.17¼
1.26¾	1.03¾	Oct.	1.20¼	1.15¾	1.15¾
1.25¼	1.08¼	Dec.	1.19	1.14¼	1.14¼
		Flax—			
4.25¾	2.83	July	3.72¾	3.46	3.46
3.72¾	3.15¼	Oct.	3.39	3.15¾	3.16
3.52	2.90¼	Dec.	3.11	2.90¼	2.91¼

Chicago Futures

Week to June 18, 1956

Crop Year from Aug. 8, 1955 High	Low		High for week	Low for week	Close June 18
		Wheat—			
2.36	1.88¾	Mar.	2.17¾	2.13¾	2.14¾
2.17¾	1.74¾	July	2.10¾	2.06	2.09
2.19¼	1.87¼	Sept.	2.12¾	2.08¼	2.09¾
2.22¼	1.99¼	Dec.	2.16¾	2.12¾	2.14¾
		Corn—			
1.51¾	1.26	Mar.	1.47¼	1.43	1.43
1.59¾	1.33¼	July	1.53¼	1.49¼	1.49¼
1.59¾	1.30¼	Sept.	1.54	1.49¼	1.49¼
1.53¼	1.31	Dec.	1.53¼	1.39	1.39¼
		Oats—			
.69¼	.61¾	July	.67¾	.65	.65¾
.71¼	.63	Sept.	.70¼	.66¼	.66¼
.74	.64¾	Dec.	.73	.69¼	.70¼
.75	.68¼	Mar.	.75	.71¾	.71¾
		Rye—			
1.35¼	1.03	July	1.27¼	1.22	1.22¼
1.35	1.07¼	Sept.	1.28	1.23¼	1.23¼
1.37	1.20¼	Dec.	1.31¼	1.26¾	1.26¾
1.34¼	1.23¼	Mar.	1.34¼	1.30¼	1.30¼
		Soybeans—(new contracts)			
July			3.19¾	2.95¼	2.95¼
Sept.			2.78¾	2.65¼	2.65¾
Nov.			2.62¾	2.53¼	2.55
Jan.			2.66	2.57	2.58¼
Mar.			2.68¼	2.59¾	2.61¼

Winnipeg Cash

	For Week June 18 High	Low	Prev. week High	Low
Oats—				
2 C. W.	.87¼	.86	.88¼	.86¼
3 C. W.	.82¼	.80¼	.83¼	.82
Barley—				
1 Feed	1.07¼	1.03¼	1.06¼	1.03¼
2 Feed	1.06¼	1.02¼	1.06¼	1.02¼
1 Malt	1.20¼	1.17¼	1.19¼	1.15¾
Rye—				
1 C. W.	1.20	1.17¼	1.17¼	1.14
2 C. W.	1.20	1.17¼	1.17¼	1.14

Chicago Cash

	For Week June 18 High	Low	Prev. week High	Low
Corn—				
2 Yell.	...	...	...	...
Oats—				
1 H. W.	...	...	...	...

THE INVESTMENT FUNDS

Champion Mutual Fund Assets Total $178,000

Champion Mutual Fund of Canada Ltd., Montreal, had total net assets of $178,427 at May 31, 1956.

Champion is an open-end investment fund which was incorporated in November, 1955, with capitalization of 10 million special shares and 1,000 common shares, all of $1 par.

Fund was formed late last year by interests associated with Champion Savings Corp., Montreal, which sells savings certificates to the public.

Assets at May 31 were invested 89.07% in common stocks, 4.94% in preferred stocks, 5.37% in government bonds and 0.62% in cash and other assets.

Commons consisted of 17.75% base metals, 14.97% pulp and paper, 13.56% oil and gas, 6.67% steels, 7.46% banks and finance, 5.32% building materials, 1.76% transportation, 5.43% public utilities and 16.15% miscellaneous.

Common Stocks

	Shares Held at May 31 1956		Shares Held at May 31 1956
Cons. Smelters	50	Jones & Laughlin	200
Hollinger Gold	100	Tor-Dom Bk	50
Int. Nickel	200	Do. rts	48
Falc'bridge Nic	50	Royal Bk	100
Steep Rock Iron	100	Ind Accept	100
Frobisher	300	Can Cement	200
Quemont Mng.	100	Gypsum, Lime	50
Abitibi P & P	100	CPR	100
Anglo-Cdn P&P	100	Bell	25
Consol. Paper	100	Int Utilities	100
Gt Lakes Paper	200	St Lawrence C	50
Imperial Oil	200	BC Power	100
Interp. Pipeline	150	Cdn Celanese	100
McColl-Front	100	Imp Tobacco	300
Cdn Oil	125	Gen Dynamics	50
BA Oil	25	Ford of Can	25
Dom Fdries	100	Famous Players	400
		Massey-H-Ferg	500
		H Walk-G & W	100

Preferred Stocks

B C Elec 4½%	50	H Smith Pap $2	50
Cdn Brew $1.25	50	Shawinigan 4%	50

Bonds	Amount
Govt of Can 3%/66	$10,000

MASSEY-HARRIS-FERGUSON LTD. at June 11 had 9,519,155 common shares outstanding.

ABITIBI POWER & PAPER CO. had 545,275 preferred shares outstanding at June 4.

ANNOUNCEMENT

Canadian Line Materials Limited Appointment

MR. GEORGE W. AXSON

Mr. L. E. Messinger, President and Managing Director of Canadian Line Materials Limited, recently announced the appointment of Mr. George W. Axson as treasurer at head office, Scarborough, Ontario. Mr. Axson joined CLM in 1943, and was successively Accountant, Office Manager Accountant and, prior to his recent appointment, Controller.

FEDERAL GRAIN LIMITED
AND
THE ALBERTA PACIFIC GRAIN CO. (1943) LTD.
WINNIPEG CALGARY
County Elevators located in all Prairie Provinces, and Terminals at Fort William, Port Arthur and Vancouver.
Cereal and Forage Seed Plant at Winnipeg.
We invite your inquiries regarding feed and seedgrain.

K. A. POWELL (CANADA) LTD.
GRAIN SHIPPERS AND EXPORTERS
GRAIN FUTURES
Owners and Operators
Fort William Terminal Elevator Co. Ltd.
and Powell Transports Ltd.
Head Office—563 Grain Exchange, Winnipeg, Man.
Affiliated Companies—Fort William, Ont., Montreal, Que., Vancouver, B.C.

N. M. PATERSON & SONS LIMITED
Grain Division
Grain & Coal Merchant
Steamship Division
Carriers of All Bulk Cargoes
Fort William, Ont. Winnipeg, Man. Montreal, P.Q.

McCabe Grain Company Limited
WINNIPEG, CANADA
LONDON, ENGLAND VANCOUVER

JAMES RICHARDSON & SONS
LIMITED
HEAD OFFICE: WINNIPEG MANITOBA
OFFICES THROUGHOUT CANADA

THE WEEK'S QUOTATIONS

Quotations here listed are the official, exchange prices for listed stocks including curb market quotations. For unlisted stocks, quotations by unlisted dealers are given. The Financial Post cannot accept any responsibility for these quotations.

Montreal and Toronto Winnipeg, Calgary and Vancouver

Bid and Ask quotes of Toronto and Montreal exchanges up to press time are published on page 30.

WEEK ENDING JUNE 15, 1956

Range 1956 High	Low	Div. Rate $	Y'ld %	Company	Sales	Last June 8	Week end. June 15 H	L	Close
1.10	.70			Abitca	69500	.85	.95	.80	.85
45¼	34½	1.50	3.8	Abitibi	6794	37	39¼	37¼	39
26½	24	1.12½	4.5	Do. 4½% pref...	2427	24½	25	24½	24½
12¼	10	.50	4.9	Acadia Atlan.	476	10¼	10½	10	10½
106½	102	5.00	4.9	Do. 5% pref...	45	104½	102½	102½	102½
24¼	21½	1.20	5.7	Do. (A)	128	21	21½	21¼	21¼
...	...	•1.00		Admiral	nil	...	...	18	18¼ ‡27
8½	7	.40	6.2	Agnew Surp.	134	7¼	7¼	16½	16½
10¼	9½	.55	5.9	Do. pref.	10	19½	19½	19½	19½
2.10	1.50	•	...	Albt. Dist.	2450	1.70	2.00	1.75	1.80
1.75	1.40		...	Do. V.T.	500	1.35	1.50	1.50	1.50
122	93		...	Algoma Steel	2600	96	103	100	102½
26¼	23	1.40	4.3	Alum. of Can. p	620	23	23¼	22½	23
52½	46½	2.25	4.8	Do. 2nd pref...	3620	50	50½	50	50½
137½	100	•a1.15	...	Aluminium	6446	120½	127	122¼	126½
8	5½	•a.15	...	Andian Nat.	100	5¼	7	7	7
15	13½	•.40	...	Anglo. Can. Oils (Brandon)	nil	...	15¾	...	15
53	43½	2.00	4.3	Ang. Cdn. Pulp	125	46	46	46	46
54	51½	2.80	5.3	Do. pref.	nil	...	53	...	53
50¼	44½	2.25	4.9	Ang. Can. Tel. p	100	45	45¼	45	45½
16½	10½	.60	5.4	Ang. Nfld.	8795	11	11¾	10¼	11¼
...	...	•1.00	...	Anglo-Scand. Inv	nil	...	...	...	11 11
28¼	24½	1.20	4.6	Anthes Imp.	25	25½	26	26	26
.80	.40		...	Arcan Corp.	nil	...	...	.55	.45
25½	21½	.80	3.7	Argus	2075	21¾	21¾	21¼	21¾
57½	53	2.40	4.4	Do. pref.	805	55	56	55	55
47	45	2.50	5.3	Do. $2.50 pref.	305	46	47	46¾	47
...	...	•a.50	...	Aro Equip.	nil	...	...	...	135
45	38	1.00+•2.60		Asbestos	2141	40	40	39	40
14	14	.60	4.4	Ashdown Hd. A.	nil	...	13¾	15¼	14
14¼	12½	.72	5.8	Do. (B)	278	13¾	13¾	12¾	12¾
5	3½	•	...	Ash Temple	420	4	5	4	4
98	98	6.00	6.0	Do. A pref.	nil	...	97¼	99	99½
10¼	9½	.65	6.5	Do. B pref.	205	9¼	10	10	10
...	...	•4.00+•2.00		Assoc. T&TA p	nil	...	...	...	101
7	6			Atlan. Accept.	nil	...	5¼	7	5¾
16	13	1.10	6.9	Do. pref.	nil	...	16	19	16
28	17½	•.25	...	Atlas Steels	5395	25½	26	25	26
14	10½	•.35+1.20		Auto Electric	210	11¾	12½	12	12¼
10½	10½	.50	4.8	Do. (A)	nil	...	9¾	10	10½
6¼	5	•	...	Auto Fabric A.	nil	...	5¼	5¼	5¼
1.20	1.00	•	...	Do. (B)	nil	...	.75	.50	1.25
42½	39	1.20+•1.20		Bk. Can. Nat.	1175	41¾	42	41¾	41¾
56	47½	1.40+•2.20		Bk. Montreal	3546	49	50	49	49½
58½	54½	1.80+•2.20		Bk. N. Scotia	1500	55	56	55½	55½
3.60	3.10			Do. Rights	$4997	0.16	0.25	3.00	3.10
45	45	3.20+•1.80		Barber-Ellis	nil	...	45	...	45
...	...	3.50	...	Do. 7% pref.	nil	...	19½	...	...
7½	7½		...	Barcelona	nil	...	...	9	17
10	9½	1.00	11.0	Bates & Innes A	nil	...	...	9¼	9¼
65¼	62	3.00+•.50		Bathurst Pr. A.	655	63	62¼	62	62
46	37	•1.25	...	Do. (B)	1500	37	38	38	38
7½	6½	.40	6.3	Beatty Bros.	246	6½	6½	6½	6½
...	...	•.50		Beaubran	nil	...	29½	30½	30
21	19	•.40	...	Beaver Lumber	225	20	20½	19½	20½
22½	21½	1.00	4.7	Do. (A)	nil	...	21¼	...	21¼
33	32¼	1.40	4.3	Do. pref.	nil	...	34½	...	32½
9½	7½	1.20•		Belding Cort.	98	7¾	7¾	17½	17½
13	12	.70	5.8	Do. pref.	nil	...	14½	12½	12
52	51	•	...	Belgium Stores	400	51	52	52	52
11½	11½	1.00	8.9	Do. pref.	275	11¼	11¾	11¼	11¼
51½	46½	2.00	4.4	Bell Telephone	19928	46½	46¾	45¾	45¾
1.19	1.02		...	Do. Rights	235554	1.04	1.08	1.02	1.07
8	6½	.40	5.3	Biltmore Hats	nil	...	5¾	6¾	7½
14½	12½	1.00	7.4	Do. (A)	20	14¼	13½	13¾	13¾
50	50	2.40+•1.40		Bird Constr.	nil	...	50	...	50
10	8			Blue Ribbon	nil	...	9	10	10
34	32	1.25•	...	Do. pref.	nil	...	25	32	32½
...	...	•.50	...	Bowes Ltd.	nil	...	18	...	18
20	17½	1.00	5.4	Brant. Cord. A.	nil	...	18	18½	18½
12½	10½	.50	4.8	Do. (B)	nil	...	9¾	11¼	10½
8	6	•.50	...	Brazilian Tr.	20578	6¾	7¼	6	6¼
98	94	6.00	6.6	Do. pref.	nil	...	90	93	91
50	46½	2.90	6.2	Bridge & Tank p	nil	...	46¼	49	46¾
3.60	2.55		...	Do. Warr.	nil	...	3	...	3
19	15		...	Bright, T. G.	25	15½	17½	13	13
21¼	20	1.15	5.8	Do. 5% pref.	50	20	20	19	20
33	29	•.30+1.40		Br. Am. Bk. N'ts	200	31	30¼	30¼	30½
45¼	35	1.00	2.4	Brit. Amer. Oil	28161	39½	42¼	39¾	41¾
95½	90	4.00	4.4	B.C. Elec. 4% pf.	10	92	90	90	90
106	99¼	4.75	4.7	Do. 4½% pref.	236	100½	100½	100½	100½
55½	50	2.50	4.9	Do. 5% pref.	851	51	51	50½	50½
53	47½	2.25	4.6	Do. 4½% pref.	270	49	49¼	47¾	47¾
51	46½	2.12½	4.6	Do. 4½% pref.	115	46¼	46½	46½	46¼
20	15½	•.25		B.C. Forest	6504	15½	16¼	15¾	16
17¼	15	.75	5.0	B.C. Packers A.	210	15½	15	15	15
15	12	1.00		Do. (B)	1005	12½	12¾	12½	12½
41¾	36½	•.95		B.C. Power	7177	39¼	41	39½	40½
52½	46	2.00	4.3	B.C. Tele.	1236	48	47¼	46	46½
1.01	.87½			B.C. Turf	300	1.00	1.00	.95	1.00
24½	17½	•.50		Bronco Co.	1295	20½	22	21	22
14½	6½	1.20‡		Bruck S. Mills A	400	8½	9	8½	8½
5	3½	•	...	Do. (B)	600	3¼	3¾	3¼	3¼
4.00	3.10	1.80	5.1	Building Prod.	1539	33¾	35	33¼	35
7½	7½		...	Bulloch's A	210	7½	7½	7½	7½
5¾	5¼		...	Do. (B)	165	5¼	5¾	5¼	5¼
31	28	1.00+•1.50		Burlington Steel	167	29	29	28½	28½
14½	11	•.60+.05		Burns & Co.	356	12	13	11½	12
9	8	.45	5.3	Burrard D.D. A	200	8¼	8¼	8¼	8¼
3.30	3.00	•	...	Butterfly Hos.	nil	...	1.15	3.15	3.10
...	...	.80	6.2	Caldwell Linen	nil	...	...	...	13
21½	21½	1.50	6.5	Do. 1st pref.	nil	...	21¼	24½	23
12¼	12	.80	6.7	Do. 2nd pref.	nil	...	12	12½	12
58½	56½	•.90		Calgary Pr.	6626	56½	58½	56½	58½
105	101½	5.00	4.9	Do. 5% pref.	nil	...	103¼	...	102
3¼	3	.10	3.1	Canada Bread	335	3.00	3.25	2.90	3.25
60	56	2.50	4.7	Do. pref. B	10	‡54½	‡53	‡53	‡53
26	26¼	1.40	5.4	Canada Cement	2917	30½	30	29¼	29¾
32½	26½	1.30	4.5	Do. pref.	339	29¼	29¼	‡27½	28¼
21	20	1.20		Can. Cr. Stores	nil	...	...	...	20
25	20½	1.00		C. & D. Sugar	2685	24	24	22½	23
19	19	•.75		Can. Floor B.	nil	...	17½	...	19
13¼	13¼	.40	3.0	Can. Foils	100	13½	13½	13¼	13¼
17	16	.60+•a4.11		Do. (A)	175	16½	16	16	16
18½	18			Can. Forg.	nil	...	16	18¼	16½
27½	25½	1.50	5.6	Do. (A)	nil	...	26½	...	27
39¾	33	•1.12½		Can. Iron	1425	34½	34¾	33	33¾
10¾	10¼			Can. Life	nil	...	10	10¼	10¼
165	155	•3.00	...	Can. Life	nil	...	150	160	160
15	15	1.25	...	Can. Machine	nil	...	...	12	11
62	53	2.00+•	...	Can. Malting	305	56	57½	56	57½
26	23¼	1.17	5.6	Do. 4½% pref.	2244	25	23¾	23¾	23¾
42	37½	1.50	4.1	Can. Packers A	10	38	‡37	‡37	‡37
37	34½	1.50	4.4	Do. (B)	344	34½	34½	34	34½
96	86	3.60+•4.40		Can. Perman.	153	‡87	‡86	‡86	‡87
104	97	4.40	4.4	Can. Safeway p	170	98½	100	98	99
36	29½	•.50	...	Can. Steamships	55	30½	30	‡22½	‡22½
14	12	.62½	5.2	Do. pref.	235	12	12¼	12	12
20	18½	2.00+2.35		Can. Vinegars	25	20	20	19	20
...	...			Can. W. Card A	nil	...	...	...	34
155	155	4.00	2.6	C. W. Cable A	nil	...	...	...	155
20	18½	•.20	...	Do. B new	360	18½	19	18½	18½
95	85	1.00+•1•		Canadian Arena	nil	...	88	...	95
7¼	6	•	...	Cdn. Bakeries	204	6	6¼	6	6
56¼	44½	1.40+•.20		Cdn. Bk. Com.	3506	50	50	49¼	49½
33½	28	1.50	5.2	Cdn. Breweries	7477	29½	29¾	28	29¼
30¼	30	1.25	4.1	Do. pref.	965	30½	30½	30¼	30¼
33	27	•1.07+1.50		Cdn. Bronze	306	36	33	31	31¼
105	104	5.00	4.8	Do. pref.	nil	...	102	...	104
42¼	32½	2.00	4.9	Cdn. Carners	6030	41	41¼	40¾	40¾
21½	15¾	•.30+•.15		Cdn. Celanese	3840	16¼	16¼	16	16
37	29	1.75	5.6	Do. pref. $1.75	270	31	31	30¼	31
21¼	18	1.00	5.6	Do. $1 pref.	125	20	18	18	18
7½	4			Cdn. Chem.	2490	9¼	9¼	9	9¼
84½	84	■	...	Cdn. Collieries	4600	91¾	94	92	94
95	84		...	Do. 5% pref.	26200	92	92	87	91
4¼	4		...	Cdn. Convert A	nil	...	4¼	5	4
...	...		...	Do. (B)	nil	...	4	4	4¼
14¾	8½	■	...	Cdn. Colliieries	575	‡13	12	10	10
9	8		...	Do. pref.	275	8	8	8	8
25½	19	•.50	...	Cdn. Dredge	2893	22	22¼	21¼	22½
29¾	22	1.00	3.4	Cdn. Fairb.	95	27	29¾	28	29½
125¼	124	6.00	4.8	Do. pref.	nil	...	125	...	124
4¼	3½	•	...	Cdn. Food Prod.	2005	3¼	3¾	3¼	3¼
6	5	•	...	Do. (A)	75	8	8¼	8¼	8¼
65	56	•	...	Do. pref.	150	60	60	60	60
1000	825	•5.00+4.00		Cdn. Gen. Elec	nil	760	760½	1025	1000
32	28¼	1.10+•.18		Cdn. G. Inv.	366	30	30	28½	29
27	23	•.50•		Cdn. G. Sec. A	200	25¼	24¼	23	23
25	25	•.50•		Do. (B)	nil	...	24	29	25
11¾	7½	••.12½		Cdn. Hydro-Card	1635	10¾	10½	10½	10½
6	5	2.10		Cdn. Ice Machine	nil	...	...	5¼	5
12¾	11	.60	6.7	Do. (A)	nil	...	11	12	12
24	19	•.40		Cdn. Indust.	2047	20½	21	20	20½
98	90	3.75	3.9	Do. pref. (‘54)	525	90	95	91¼	95
96	85	•2.00+2.00		C. Ingersoll R.	450	94	96	95	96
20	17¼	•.75	3.0	Cdn. Int. L. Tr.	nil	...	17½	21	18
98	97	5.00	5.2	Do. pref.	nil	...	96	...	97
41	21	1.00		Cdn. Locomo.	31	31	32	31	31
6.62½	4.35	1.06		Cdn. Marconi	330	5.00	4.95	4.50	4.95
25	19½	.60	2.6	Can. Oil	3098	23	23½	22½	23½
107½	100	5.00	4.9	Do. 5% pref.	200	104	104	103	104
165	160	8.00	4.8	Do. 8% pref.	nil	...	160	161	160
99	93	4.00	4.3	Do. 4% pref.	nil	...	...	94	93½
...	...			Do. Warr. 1953	nil	...	...	18	15
5.00	3.30			Do. Warr. 1955	120	3.60	3.60	3.50	3.60
36¼	30½	1.50	4.7	Cdn. Pacific	17206	30¼	31¼	30¼	31¼
29½	22½			Cdn. Petrofina p	1924	28	28	28	28½
7¼	5¼			Cdn. Pr. & P S	1520	7	7¼	6	7¼
1.12	.85			Cdn. Propane	100	1.10	1.10	1.10	1.10
21½	15			Cdn. Salt	nil	...	21	21¼	21
6	5			Cdn. Silk A	nil	...	5	5	4½
120	91	.60+•.10		Cdn. Tire	70	120	116	110	111
...	...	1.00	4.8	Do. pref.	nil	...	20¼	...	21
104½	100½	5.00	5.0	Cdn. Utilities pf	5	‡100	‡100	‡100	‡100
...	...			Do. 4½% pref.	nil	...	...	...	92
40	30½	1.50	4.1	Cdn. Vickers	2675	33	36½	32½	36¼
11½	10½			Can. Wallpaper A.	nil	...	12	12	11½
...	...			Do. (B)	nil	...	11	12	11
24	14¼			Cdn. Lumber	500	23	23¼	23	23
19	16½	.80	+4.6	Cdn. West Gas p	140	17	18	17¼	17½
53	46	•.75		C. Westinghouse	330	46¼	46½	46¼	46½
5.95	4.60	•a.15		Capital Estates	2930	5.12½	5.00	‡4.00	5.00
1.50	1.10			Caring Br. Alta	400	1.10	1.00	1.10	1.10
1.20	1.00			Do. V.T.	100	1.15	1.00	1.00	1.00
13¾	12½	.60+•.20		Carter, J. B. A.	nil	...	...	14½	13½
18	17	•1.00		Do. (B)	nil	...	18	...	18
28	27½	.50+•.10		Catelli Food A.	nil	...	25	27	25
40	37¼	1.00+•.10		Do. (B)	100	40	38	38	38
...	...	•.25		Celanese Corp.	nil	...	...	...	22½
...	...	•a4.50		Do. 4½% pref.	nil	...	...	...	...
...	...	•a7.00		Do. 7% 2nd pf.	nil	...	...	...	...
...	...	.80•	6.5	Cent. Can. Invest	50	28	‡20½	‡20½	‡20½
103	102½	5.00	4.9	Do. pref.	nil	...	101	...	103
6	5	2.50+•a.75		Cent. Nor. Air A	nil	...	...	8	5½
8	6			Do. (B)	130	8½	8¼	8¼	8¼
72½	58	1.40	2.4	Chart. Trust	80	54	59	‡59	59
3.60	3.00			Do. Rights	7283	3.50	3.60	3.35	3.50
8.00	3.30			Chatco Steel	3885	6¼	8	6¼	8
6¾	5	.50	0.7	Do. pref.	1105	6	6¼	6	6¼
18¼	16½	1.00	6.5	Chateau-Gai	176	17	‡16	‡16½	‡16½
86	59	•a1.50+•1.00		Chrysler Corp	170	60	64	62	63½
65	40	1.60		Cinzano A	nil	...	45	50	51
...	...	5½%	...	Do. 5½% pref.	nil	...	...	51	51½
2	2	•	...	Circle Bar Knit	nil	...	1½	3	2
42	41			Do. (A)	nil	...	41	9	41
6.00	3.70	•	...	Claude- Neon A	268	3¼	6	4	6
6.00	3.50	•	...	Do. (B)	210	4	6	4½	6
76	68	•	...	Do. pref.	35	80	75	70	75
22½	19	.80	4.0	Cochrane-D	nil	...	...	17½	18½ 19½
22½	19			Do. (A)	nil	...	...	...	...
8½	5½	•	...	Cockshutt Farm	1650	6¼	6¼	6	6
17½	16½	1.00	6.1	Coghlin, B. J.	nil	...	...	...	...
...	...	•.75+.35		Coll. Terminal	nil	...	...	11¾	... 21
...	...	•.75+.35		Do. pref.	nil	...	...	13¾	... 13
18	91	•.12½	...	Comb. Enter.	1560	10¾	12	10¾	12
11	10¼	.80	7.3	Conduits Nat.	335	10¾	11	10¾	11

Range 1956 High	Low	Div. Rate $	Y'ld %	Company	Sales	Last June 8	Week end. June 15 H	L	Close
170	139	1.50	1.1	Conf. Life	nil	...	105	145	140
10½	6½	1.25	...	Cons. Bakeries	635	7	7	6½	7
1.90	1.10		...	Cons. Div. Sec. A	297	1.55	1.60	1.50	1.60
36	33	•1.00	...	Do. pref.	197	35¼	36	35	35
...	...	•.25	...	Cons. Fire Ins.	nil	...	7	7	6¾
41¼	33½	•.90+.40		Cons. Paper	10448	40	41¼	39½	41¼
3.00	2.30	•	...	Cons. Press A	255	2.50	2.40	2.30	2.30
1½	1		...	Do. (B)	nil	...	1	1½	1
38	31½	.80+•.55		Cons. Smelters	14349	31¾	36	36¼	36
6¾	4½	•	...	Cons. Textiles	nil	...	4¾	5¼	4½
...	...	1.00	4.9	Do. pref.	nil	...	...	...	‡20½
22½	20	.50	2.9	Consumers' Gas	17201	20½	20¼	20	20½
33½	29½	1.50	4.7	Cont. Diam. Glass	50	31¼	32	32	32
...	...	•.90a8		Cont. Can•	nil	...	...	...	85
5	4½		...	Copp Clark	100	4½	5	5	5
18	16	•.50	...	Corbys A	1050	16½	16½	16½	16½
6¾	4½	•	...	Do. (B)	25	16	15½	15½	15½
...	...	1.00	4.9	Do. pref.	nil	...	...	...	‡20½
7½	7	‡.25	...	Coronet Pr. A	100	...	7	7	7
7¼	6½	.40	2.3	Do. B	3187	18	18	17½	17½
43½	41	2.40	5.6	Do. pref.	842	43	43½	42½	43
90	73½	•1.50+•12.5		Loblaw Inc.	225	75	77	73½	76
...	...			Lochabar A	nil	...	10	...	...
...	...			Do. B	nil	...	2.50	...	...
...	...	4.00+•21.00		Loew's Theatres	nil	...	120	74	115
7½	7	‡.25		Lon. Can. Invest.	530	7¼	7¼	7	7½
3	1½	.50	7.5	Lon. Hose	20	3	2	2	2
71	61	•.60+.40		Do. (A)	575	7¼	7¼	7¼	7¼
26½	23	.90	3.8	Lower St. Law. p	50	‡22	23½	‡22½	23½
24½	21¾	1.00	4.4	Lowneys	50	22	22½	22½	22½
5.25	4.15	.24+•2.03		Lucky Lager	1400	4.60	4.60	4.50	4.50
42	29	‡2.00		Mackin Steel	nil	...	43	45	42
...	...	5.00	5.0	Do. pref.	nil	...	100	...	‡100
100½	88	2.00+•1.00		Maclaren Pr.	25	92	92	91	92
46	39	2.50	1.1	MacMil. & Blo. A	3607	40½	43¼	41	43
48	40½	1.80+•.20		Do. (B)	3950	1.40	1.40	1.30	1.40
1.70	1.25		...	Mages SP.G.	nil	...	...	25½	25
•.25	20	1.50	...	Mailman Corp.	nil	...	...	...	6
104	92	4.50	4.7	Do. 4½% pref.	210	93	95	93¼	95
8	6	•.37½		Maxwell Ltd.	705	7¼	8	7¼	7½
12	10½	1.00	9.0	McBrine pref.	nil	...	10½	11¼	11
21	19	.60	3.1	McCabe A	nil	...	20	20	19½
...	...	.60+•.10		Do. (B)	nil	...	18	20	‡20
52	41	1.40	2.7	McColl. Fron.	1942	50	51	49	51
100	94	4.00	4.0	Do. pref.	155	95	99	98½	99
12	4			Melchers	nil	...	4	‡3¼	‡3¼
12	11	.60+•.10		Do. pref.	50	12	12	12	12
16	10	1.00	7.1	Mod. Radiation	1026	14	14	14	‡14
28	23½	1.20+1.40		Molson Brew. A	620	24	24	23½	23½
27	23½	1.20+1.40		Do. (B)	130	24	23½	‡22	23½
6¼	5	•	...	Monarch Knit.	nil	...	5	6	5
52	44	•	...	Do. 4½% pref.	nil	...	54	56	54
...	...	12%	0.9	Monarch Life	nil	...	275	...	255
60	53	2.00	4.5	Monarch Mills	750	34½	35¾	34	35¼
44¼	31	1.20+•.25		Donohue Bros.	750	34½	35¾	34	35¼
36	31			Dow Brew.	1497	35	36	35	36
29½	24	•.30		Du Pont of Can.	2697	24½	25	24½	24½
96	96	3.75	4.2	Dupont pref.	90	96	96	96	96
9	8¼	.55	6.9	Dupuis Frr.	50	9	18	18	18
4.25	3.10			East Koot. Pr.	52	4¼	4	4	4
70	70			Do. pref.	20	70	175	70	175
...	...			East Bak. 4% pf	nil	...	...	...	...
8	4			East Steel	505	6	6¼	6	6
...	...	•2.00		East Theat.	nil	...	26	...	26
19	16½	.20+•.35		Easy Washing	nil	...	15¼	16½	16
...	...	1.00		Do. 5% pref.	nil	...	16	15½	...
38½	35	1.00+1.50		Economic Inv.	20	37¼	37	37	37
68½	55	1.00	1.8	Eddy Paper	195	55	57	55¼	55¼
1.25	1.21			Electra Invest.	nil	...	.98	...	1.25
15½	12½	•1.00+1.25		Electrolux	425	13	13¼	12½	12½
93½	71	•.75	0.7	Empire Life	35	83	85	83	83
13½	9	.40	4.4	Enam. & Heat.	nil	...	9	9	9
57	45	•.65+.20		Equitable Life	nil	...	50	51	51
7½	6½	.60	8.9	Erie Fir. & W. A	nil	...	6¾	...	6¾
25	21	1.00		Do. (B)	25	‡2.65	‡2.65	‡2.65	‡2.65
23¼	21	1.04	6.9	Estabrooks pf.	nil	...	18	22	21½
1.50	.75			Excelsior pref.	nil	...	...	...	...
22¼	17½	1.50	8.6	Fam. Players	244	18	18	17½	17½
25	22¼	•1.50		Fanny Farmer	660	23	23	22¼	22¼
...	...	•2.00+1.00		Federal Fire	nil	...	...	...	30
36	29½	•1.00		Federal Grain	90	29½	30	29½	29½
31½	29¼	1.40	4.7	Fed. Grain A	nil	...	28¼	29½	29½
8	4			Fibre Products	nil	...

Mine and Oil Stocks

Range 1956 High	Low	Div. Rate $	Company	Sales	Last June 8	Week Ending June 15 High	Low	Close
38.00	31.25	.80 +*.95	Con. Smelt.	14,249	31.75	33.00	31.50	33.00
5.40	3.45	...	Con. Sud'ry	82,745	3.80	4.05	3.70	4.00
.60	.35	...	Con. Thor	23,550	.45	.47	.37	.45
.90	.55	...	Con. Tung.	98,420	.79	.83	.75	.83
3.25	1.50	...	Con. Potash	4,890	1.90	1.80	†1.40	1.50
8.00	5.75	...	Conwest	4,510	5.90	6.40	5.90	6.40
6.65	3.25	...	Copper Cliff	21,867	3.35	4.10	3.35	4.00
3.00	1.42	...	Copper Corp.	23,030	2.05	2.20	2.00	2.00
.57	.39	...	Coppercrest	26,060	.46	.55	.43	.50
.96	.19½	...	Copper Man.	31,850	.22	.24½	.20	.20½
.13½	.05	...	Cortez	14,100	.11½	.12	.11	.11½
2.18	1.15	...	Coulee	11,200	1.45	1.55	1.40	1.43
.29	.17	...	Cournor	10,500	.20	.24	.19	.20
2.10	1.69	...	Cowichan	60,800	1.95	2.19	1.75	1.85
.16	.08	...	Crestaurum	1,500	.11	.11	.10½	.11
.37	.20	...	Croinor	4,500	.21	.22	.20	.20
.10	.05	...	Cron. Bab.	3,500	.05	.06	.05½	.06
.73	.34	...	Crowpat	11,625	.35	.40	.34	.40
.09½	.00¾	...	Cryderman	nil	...	.01¼	.03½	.00¾
.29	.16	...	Cusco	6,500	.18	.19	.18	.19
1.26	.30	...	D'Aragon	68,350	.65	.80	.62	.79
1.10	.63	...	Decoursey B.	84,207	.66	.74	.63	.67
.47	.22	...	Do. warr.	3,000	.28	.27	.27	.27
.85	.50	...	Deer Horn	8,000	.51½	.53	.50	.50
.32½	.17	...	D'Eldona	80,449	.30	.25½	.20	.24
.88	.70	.04	Delnite	1,000	.78	.78	.77	.77
1.00	.43	...	Desmond	25,995	.46	.50	.44½	.49
.30	.14	...	Detta Min.	34,000	.14½	.15	.14	.14½
.94½	.28	...	Diadem	37,256	.57	.59	.48	.52
.30	.07	...	Dickstone C.	6,200	.20	.21	.15	.18
15.87½	13.75	.70	Dome M.	2,256	14.00	14.75	†13.62½	14.62½
.28	.15	...	Dom. Asb.	7,000	.17	.17	.16	.16
.70	.42	...	Donalda	54,050	.46	.56	.46	.50
.09	.04	...	Doreen	5,500	.05	.06	.04½	.06
3.05	.78	...	Duvan	86,400	1.07	1.24	1.13	1.13
.47	.18	...	Duvex	22,500	.29	.33	.28	.29
1.60	1.00	...	Dyno	14,780	1.06	1.14	1.06	1.10
.13¾	.09½	...	East Amph.	2,500	.09½	.10	.09½	.09½
2.52	1.75	*.05	East Mal.	4,685	1.87	1.88	1.80	1.85
6.75	5.70	*.15	East Sull.	4,965	5.85	6.00	5.85	5.90
1.50	.96	...	East. Asb.	32,700	1.10	1.07	1.00	1.05
1.08	.62	...	East. Metals	30,350	.67	.70	.66	.68
7.70	5.60	...	East Min.	17,934	6.25	6.50	6.20	6.45
.79	.50	...	Elder	4,125	.53	.55	.50	.51
1.80	.70	...	Eldrich	9,600	1.10	1.10	1.00	1.08
.55	.09	...	El Pen-Rey	2,385,854	.39	.55	.42	.55
.20	.09½	...	El Sol	25,500	.12½	.16	.12	.15
.31	.19	...	Emerald	2,500	.21	.22	.23	.21
2.35	1.08	...	Eureka	170,790	1.64	1.73	1.55	1.62
.30	.30	...	Fab. Met.	1,700	.30	.31	.30	.30
38.50	29.00	*.50 +.10	Falconbridge	6,740	32.12½	34.00	32.50	34.00
.49	.22	...	Fano	4,500	.28	.31	.25	.30
2.37	1.25	...	Faraday	48,000	1.40	1.70	1.41	1.55
.72	.24	...	Farw't Tung	14,090	.25	.25	.24	.25
.62	.20	...	Federal	13,640	.32	.38½	.33	.33
.01¼	.00½	...	Flin Flon	nil	...	.00½	.01	.01
.28	.13	...	Fontana '45.	8,700	.13	.15	.13	.13½
.70	.35	...	Forty-Four	nil	...	.33	.45	.35
.24	.07½	...	Francoeur	621,050	.12	.24	.12	.22
4.75	3.80	...	Frobisher	22,700	4.10	4.40	4.20	4.25
.60	.01	...	Do. warr.	68,930	.01	.04	.01	.02
87.00	85.00	...	Do. 4% deb.	7,000	88.00	85.00	85.00	85.00
.42	.25	...	Fundy Bay	22,500	.29	.30	.25	.27
.54	.32	...	Gaitwin	45,300	.53	.53	.52	.52
36.00	34.00	...	Gaspe Cop.	425	50.00	51.75	50.00	50.00
24.00	17.00	...	Geco	3,004	18.25	19.12½	18.00	19.12½
.64	.32	...	Genex	2,000	.35	.35	.35	.35
3.90	2.00	...	Geo-Scient.	9,830	2.00	2.30	2.10	2.15
1.05	.70	.06	Giant Mas.	2,500	.78	.78	.75	.75
6.30	4.50	.15	Giant Yf'e	2,450	4.75	5.00	4.90	4.95
1.80	.70	...	Glenn Ur.	44,755	.78	.85	.70	.84
.46	.30	...	Goldale	27,300	.31½	.32	.31	.31
.36	.20	...	Gold Crest	29,700	.25	.27	.24½	.24½
.13½	.09	...	Gold Eagle	3,000	.10	.12	.10	.10
..	..	...	Gold Lake	nil	...	.01½	.02	.01½
3.00	2.80	...	Gold Man.	7,650	3.20	3.25	3.00	3.15
.60	.30	...	Goldfields	7,000	.30	.32½	.32	.32
.45	.25½	...	Graham B.	4,700	.26	.26½	.25½	.26½
19.75	14.50	*.25	Granby	250	†13.00	15.00	14.75	15.00
.65	.30	...	Grandines	42,050	.35	.37	.32	.37
.56	.42	*.02	Grandoro	nil	...	.50	.57	.50
9.45	5.60	...	Granduc	3,520	5.85	6.25	5.75	6.15
.22	.18	...	Grandview	nil	...	.13½	.15	†.12
.03½	.02	...	Great Falls	1,000	.03	.03	.03	.03
1.09	.48	...	Greyhawk	93,750	.58	.62	.50	.52
.21	.12	...	Gui.-Por. Ur.	1,000	.13	.13	.13	.13
1.49	.47	...	Gulch	35,300	.47	.53	.48	.48
.26	.14	...	Gulf Lead	10,601	.15	.22	.15	.22
19.75	15.25	...	Gunnar G.	39,550	17.12½	19.25	17.50	18.87½
12.75	8.50	...	Do. warr.	19,555	9.20	11.25	9.60	10.50
.29	.12	...	Gwillim L.	38,700	.14	.15½	.12	.15½
3.50	3.25	.20	Hallnor	100	3.30	3.45	3.45	3.45
.09	.04½	...	Hamil.	1,000	.05	.05	.05	.05
.19	.12½	...	Hard Rock	17,300	.13	.13½	.13	.13½
1.70	.70	...	Harr. Min.	34,700	.78	.80	.73	.80
.24	.17½	...	Hasaga	3,639	.18	.21	.19	.19
.20	.13	...	H'd of Lakes	7,500	.13½	.16	.13½	.13½
2.09	1.10	...	Headway	16,800	1.35	1.45	1.35	1.37
.39½	.10	...	Heath	129,800	.28	.30	.27	.28
.15	.05½	...	Heva G.M.	27,200	.11	.11½	.11	.11
.85	.70	...	High.-Bell	2,050	.78	.80	.75	.80
30.12½	22.37½	.24	Hollinger	4,978	26.00	27.00	26.50	27.00
10.87½	6.95	...	Hoyle	8,915	7.90	8.25	7.90	8.20
84.00	64.00	*2.50 +11.00	Hudson Bay	9,810	77.37½	84.00	77.50	83.00
.30	.09	...	Hudson R.	5,500	.18	.22	.17	.21
.53	.28	...	Hugh Pam.	15,600	.26	.30	.35	.37
.31½	.09	...	Imperial	26,000	.22	.21½	.17	.20
.86	.15	...	Indian L.	152,100	.20½	.28	.20	.24
.07½	.04½	...	Indian M.	6,000	.06	.06½	.03½	.06
1.74	1.16	...	Inspiration	6,625	1.30	1.30	1.25	1.26
98.50	78.25	*4.65 +21.35	Int. Nickel	16,290	89.25	92.62½	89.75	92.00
131.87½	126.50	*7%	Do. pfd.	260	128.00	128.50	128.00	128.00
6.62½	6.25	*7%	Do. $5 pfd.	nil	...	6.25	6.50	†6.00
1.82	.92	...	Int. Ranwick	12,450	.96	1.05	.90	.96
3.85	2.65	...	Irish Cop.	11,720	2.70	2.90	2.65	2.80
4.75	2.75	...	Iron Bay	3,300	3.25	3.40	3.30	3.35
.01¾	.01	...	Island Lake	nil	...	.01	.01¾	.01¾
.35	.21	...	Iso Uran.	5,000	.23	.25	.22	.25
1.30	.32	...	Jackson M.	9,699	.41	.43	.39	.43
.40	.20	±.04 +.00½	Jack Waite	2,500	.21	.21	.20½	.21
.52	.26	...	Jacobus	2,000	.32	.33½	.33	.33
.36	.20	...	Jardun	3,800	.25	.26½	.23	.25
1.38	.51	...	Jaye	113,191	.80	1.00	.80	.98
.50	.28	...	Jeanette	57,189	.43	.47	.41	.44
..	..	...	Jeep	nil	...	...	...	.22
.28	.09½	...	Jellicoe	124,350	.20	.24½	.20½	.22½
.22	.14	...	Joburke	26,700	.14	.15½	.14	.15½
1.50	.98	...	Joliet Que.	26,600	1.10	1.20	1.12	1.12
.30	.23	...	Jasmith	179,075	.34	.33	.33	.33
1.00	.89	...	R. J. Jowsey	10,308	.92	1.00	.91	1.00
.12½	.08	...	Kenville	6,500	.09	.10	.08½	.08½
20.50	17.00	.80	K.-Addison	5,807	19.87½	20.00	19.50	19.75
.95	.40	...	Kerr Lake	500	.68	.61	.61	.61
.13½	.10	...	Keyboycon	14,625	.11	.11	.10	.10
.90	.60	...	Keymet	nil	...	.66	.70	.65
5.10	3.50	...	Kilembe	2,165	3.80	4.00	3.60	3.85
3.20	1.55	...	Do. warr.	2,450	1.92	1.95	1.84	1.85
.92	.32	...	Kirk. H. Bay	299,392	.77	.85	.74	.85
2.01	1.50	...	Kirk. Min.	3,510	1.65	1.70	1.65	1.70
.49	.24½	...	Kirk. Town.	2,500	.25½	.28½	.25	.26
.43	.16	...	Kontiki Ld.	700	.16	.19	.17	.19
.05	.02½	...	Koot. Base	7,500	.03	.02½	.02½	.02½
25.00	18.00	...	Labrador	1,205	20.50	21.00	20.00	20.75
3.75	.95	...	Lk. Cinch	22,700	1.00	1.05	.95	.96
3.55	1.95	...	L. Dufault	23,689	2.69	3.00	2.76	2.95
.25	.13	...	L. Lingman	7,336	.15	.15½	.14	.14
3.25	1.90	...	L. Nordic	58,175	2.65	2.90	2.57	2.90
.38	.21	...	Lake Osu	3,000	.22	.22	.21	.21
6.00	4.25	±.10	Lake Shore	617	14.25	4.50	4.25	4.25
.37	.23	...	Lake Wasa	2,350	.23	.24	.23	.24
4.45	2.65	.10	La Luz	1,225	4.20	4.20	4.05	4.20
3.53	2.80	*.10	Lamaque G.	530	2.95	3.00	2.90	3.00
.85	.68	*.03	Leitch Gold	2,100	.75	.80	.76	.76
.41	.12½	...	Lencourt	29,100	.17	.19	.17	.17
.35	.20	...	Lexindin	5,600	.22	.23	.22	.22
27½	.15	...	Lingside	54,500	.18	.18½	.16½	.17½
2.50	.90	...	Lithium	1,400	.90	1.00	†.70	†.70
2.60	1.29	...	Little L.L.	2,120	1.60	1.60	1.50	1.50
.26	.06½	...	Lomega	80,965	.20	.23	.19	.20½
2.18	1.10	...	Lorado Ur.	62,845	1.10	1.29	1.16	1.20
.40	.24	...	Louvicourt	11,000	.26	.25	.24	.24
2.50	1.25	...	Lyndhurst	66,800	1.28	1.34	1.34	1.49
17½	.08	...	Lynx Yk.	14,000	.11	.12	.10½	.11
2.30	1.90	*.06 +2.03	Macassa	3,895	2.00	2.00	1.97	1.99
1.51	.83	...	Macdonald	11,800	.85	.89	.83	.86
.24½	.15	...	Macfie	4,300	.16	.16	.15	.16
.57	.32	...	Mackeno	238,910	.32½	.42	.32	.42
1.49	1.21	*.05	Macleod	3,550	1.22	1.32	1.25	1.25
2.70	2.20	*.05	Mad. R.L.	5,892	2.50	2.50	2.40	2.50
.21½	.12	...	Magnet	16,940	.12	.13	.12	.12
2.65	1.45	*.02	Malartic G.	7,900	1.50	1.50	1.45	1.50
.41	.20	...	Manoast Ur.	7,350	.21	.27	.20	.27
.49	.17	...	Maralgo	44,823	.37	.36	.31	.33
.35	.17	...	Marcon	6,525	.20	.20	.17	.20
.14	.09½	...	Marcus Gold	6,550	.10½	.14	.11	.11
5.20	2.15	...	Maritimes	62,450	2.85	3.05	2.85	2.95
3.25	.60	...	Do. A warr.	18,025	.85	1.00	.81	.95
2.50	.74	...	Do. B warr.	8,450	1.35	1.45	1.30	1.33
.39	.15	...	Martin McN.	22,000	.29	.20	.18	.19
.65	.20	...	Massberyle	10,000	.50	.40	.40	.40
.95	.65	...	Matachewan	nil	...	.60	.90	.65
2.10	1.02	...	Maybrun	148,490	1.10	1.29	1.08	1.17
95.50	80.50	2.00 +1.00	McIntyre	1,150	83.00	84.00	82.50	82.50
.45	.32	...	McK. R.L.	3,000	.35	.37	.33½	.33½
.25	.13	...	McMarmac	8,326	.16	.15	.13	.13
.70	.29½	...	McWatters	11,650	.41	.48	.44	.46
1.37	.52	...	Mentor Exp.	20,600	.58	.67	.60	.60
.54	.20	...	Mercedes	306,906	.42	.54	.42	.54
4.65	2.55	...	Merrill Is.	74,485	2.93	3.10	2.90	3.05
.40	.23	...	Meta Ur.	17,325	.25	.26	.23	.23
1.89	.81	...	Midrim	221,561	1.64	1.69	1.66	1.88
1.07	.45	...	Midwest	17,100	.56	.63	.60	.63
2.80	1.61	...	Milliken L.	30,525	1.86	2.05	1.85	1.88
.42	.17	...	Mindamar	3,100	.19	.21½	.19	.20
29.37½	22.35	*.50 +2.25	Mng. Corp.	1,680	23.75	24.50	23.50	24.00
.98	.50	...	Min. End.	295,677	.84	.98	.82	.95
1.00	.20	...	Min-Ore	33,384	.32	.37	.30	.30
1.40	.70	...	Mogador	8,700	.85	.90	.85	.85
3.95	2.90	...	Mogul	10,220	2.95	3.10	2.91	3.00
1.74	1.20	...	Molyb'nite	4,100	1.25	1.32	1.28	1.28
.90	.72	*.05	Moneta	2,840	.72	.76	.73	.76
8.25	2.00	...	Montgary	30,200	3.70	3.95	3.55	3.85
11½	.06½	...	Montpas	1,000	.07	.08	.08	.08
1.65	1.20	...	Multi-Min.	4,070	1.30	1.31	1.25	1.25
2.15	1.02	...	Nama Cr.	6,000	1.15	1.20	1.15	1.16
1.41	.53	...	Nat. Ex.	72,300	.54	.57	.53	.55
.42	.22	...	Neilo Min.	nil	...	.26	.30	.27
4.10	1.35	...	Nesbitt L.	30,800	1.36	1.35	1.37	1.40
.41	.22	...	N. Algey.	116,832	.24	.24	.23	.22
.93	.53	...	N. Athona	8,500	.55	.59	.53	.56
.31	.16½	...	New Bidl'e.	9,100	.16½	.19	.16½	.18
1.30	.70	...	N. Calumet.	3,100	.74	.77	.75	.76
1.15	1.00	...	N. Delhi	5,200	1.01	1.07	1.01	1.02
2.03	1.72	*.05	N. Dickin	3,534	1.83	1.87	1.72	1.72
.64	.08	...	N. Formaque	80,500	.43	.52	.42	.50
.63	.21	...	N. Fortune	179,450	.40	.47	.37	.44
.36	.22	...	N. G'dvue	235,316	.27	.30	.26	.30
.40	.27	...	N. Har'na	5,825	.28	.29	.27	.28
1.19	.59	...	N. H'ridge	41,828	.70	.70	.65	.67
.50	.29	...	N. Hosco	22,500	.30	.35	.29½	.30
.50	.14	...	N. Jack Lk.	99,800	.47	.50	.46	.50
2.17	.33	...	N. Jacutet	356,108	1.55	1.79	1.55	1.75
.54	.20	...	N. Jason	43,200	.23	.27	.23	.25
.33	.14½	...	N. Kelore	27,400	.18	.21	.18	.18½
5.00	4.50	...	Newkirk	800	4.50	4.90	4.60	4.75
.69	.35	...	N. Lafayette	116,625	.50	.60	.50	.50
1.13	.56	...	Newlund	28,500	.60	.70	.61	.70
1.35	.70	...	N. Man.	30,200	1.15	1.20	1.05	1.20
.98	.23	...	N. Minda-S.	70,373	.69	.80	.69	.70
.27	.15	...	N. M'lque	12,525	.16	.16½	.15	.16½
2.50	.74	...	Newnorth	11,000	.11½	.11½	.11½	.12
2.00	1.48	...	N. Pac. Coal	8,900	1.60	1.56	1.50	1.50
.31½	.16	...	N. Rouyn	24,325	.20	.23	.20	.23
7.60	2.38	...	N. Royran	73,132	3.40	4.10	3.40	4.10
.16	.09	...	N. Santiago	32,000	.09	.10½	.09	.10
.20	.08½	...	N. Senator	24,600	.10½	.11½	.10	.11
.37	.22½	...	N. Taku	1,026	.27	.27½	.27	.27½
.35	.17	...	N. Thurbois	16,500	.17	.19	.17	.19
1.00	.10	...	N. Vinray	30,200	.11	.13	.10	.11
4.25	1.37	...	Nickel Rim.	127,830	3.70	4.20	3.80	4.20
8.25	7.37	...	Nipissing	19,000	3.80	4	3.90	4
.43	.09	...	Nisto	45,600	.24	.24	.21	.23
.15	.10½	...	Nocana	3,000	.11	.12	.11	.11
1.46	.51	‡.03	Nor-Acme	81,470	1.30	1.42	1.27	1.30
64.62½	51.50	2.00	Noranda	7,268	57.00	59.87½	57.00	58.75
.56	.18	...	Norgold	17,000	.20	.21	.18	.19
.19½	.10	...	Norlartic	19,500	.12½	.19½	.13½	.19½
7.90	6.60	*.30	Normetal	7,548	6.75	6.90	6.70	6.80
1.62	.46	...	Norpax	80,268	1.45	1.62	1.46	1.49
.14½	.08½	...	North Inca	46,500	.09	.10	.09	.10
1.62	.80	...	N. Rankin	149,300	1.36	1.48	1.30	1.38
.13	.09	...	N. Trinity	13,700	.11	.11½	.10½	.10½
1.65	.56	...	North Can.	34,806	1.40	1.65	1.45	1.65
.51	.28	...	N.W. Vent.	8,500	.30	.32	.29½	.29
.85	.31	...	Norvalie	15,075	.60	.66	.60	.65
.55	.21	...	Nu-Age	141,100	.24	.33	.25	.33
.10	.03	...	Nuclear	7,500	.05½	.06	.04½	.05
.85	.42	...	Nudulama	12,350	.45	.50	.43	.50
.75	.30	...	Obaliski	188,775	.21	.55	.30	.55
.27	.10	...	Obaska	7,500	.14	.13½	.12	.13
1.30	.68	*.02	O'Brien	11,025	.90	.92	.86	.88
.41	.11½	...	Ogama	236,100	.24	.29½	.24	.28
1.15	.71	...	Oka	33,550	.90	1.00	.88	1.00
.45	.24½	...	O'Leary	18,200	.26	.27	.24½	.25½
.08½	.04	...	Omnitrans	127,200	.06	.08	.05½	.07
1.20	.48	...	Opemisca	63,800	.49	.60	.50	.60
19.87½	8.20	...	Opemiska	20,715	15.00	16.00	14.75	15.25
.27	.16	...	Orchan	7,400	.17½	.21	.16	.18
.57	.24	...	Orenda	13,700	.24	.26	.24	.24
.89	.40	...	Ormsby	13,100	.65	.72	.67	.70
.63	.40	...	Osisko	8,211	.40	.42	.41	.42
.16	.11	...	Pac. East.	29,000	.14	.13½	.12½	.12½
.50	.27½	...	Pac. Nickel	8,800	.47	.47	.40	.45
.02½	.01½	...	Packsack	nil	...	.02	.03	.02
.78	.50	...	Pamour P.	5,597	.54	.56	.53	.55
2.05	.78	...	Panel	43,200	1.05	1.15	1.00	1.05
.23	.09½	...	Paramaque	22,125	.11	.14	.11	.14
.19	.11	...	Parbec	22,200	.11½	.13	.11	.11
1.50	.80	...	Pardee	38,173	.80	.87	.80	.86
1.90	.80	...	Pater	6,300	.86	.90	.83	.85
6.75	5.45	*.10	Pato Cons.	2,035	5.75	5.75	5.60	5.70
.39½	.31	‡.01½	Paymaster	13,600	.31	.34	.31	.32
5.15	4.00	±.25	Pend Oreille	1,000	4.20	4.10	4.10	4.10
7.90	6.60	*.30	Perron Gold	1,200	.26	.25	.25	.25
2.25	1.35	.10	Pickle Crow	17,610	1.50	1.60	1.40	1.60
2.10	1.75	*.12½	Pioneer G.	4,600	1.90	1.90	1.85	1.90
.18	.11	...	Pitch-Ore	13,000	.13	.13	.12	.13
.36	.15	...	Pitt G.	126,000	.20	.23	.19	.22
13.75	12.00	.50	Placer Dev.	2,610	12.25	12.62½	12.25	12.37½
.53	.16	...	Porc. Prime	21,000	.16	.18½	.16	.18½
.40	.31	...	Portage	18,800	.33	.34	.31	.31
.60	.50	...	Powell R.	700	.50	.52	.52	.52
.23½	.05½	...	Prem. Bord.	50,600	.18	.18	.17	.18
8.30	5.60	.08	Preston E.	3,550	6.35	6.85	6.35	6.80
9.40	5.25	...	Pronto	4,045	5.50	5.75	5.25	5.75
5.40	2.72	...	Do. warr.	240	2.75	2.75	2.75	2.75
2.25	1.50	...	Prospectors	4,000	1.70	1.80	1.70	1.73
.45	.15	...	Purdy Mica	55,100	.25	.30	.26	.30
.90	.39	...	Quatsino	51,325	.72	.80	.65	.77
4.85	1.63	*■	Que. Chib.	102,314	1.75	2.20	1.75	2.10
3.50	1.91	...	Que. Cop.	23,150	1.95	2.30	1.91	2.22
.32	.09½	...	Que. Lab.	175,700	.15	.20	.15	.20
15.00	11.00	...	Que. Lith.	2,200	11.25	11.50	11.00	11.00
1.94	1.05	...	Que. Man.	3,200	1.10	1.20	1.13	1.19
4.60	3.60	...	Que. Met.	15,756	3.60	3.80	3.60	3.75
1.25	.44	...	Que. Smelt.	43,100	.62	.72	.66	.70
.30	.18	...	Queenston C.	6,109	.22	.24	.22	.24
30.00	24.75	*1.00	Quemont	1,840	24.75	26.75	25.00	26.50
.35	.17	...	Radiore	16,800	1.12	1.20	1.12	1.19
2.50	1.30	...	Rainville	1,800	1.40	1.58	1.45	1.50
6.05	3.20	...	Rare Earth	32,155	3.65	3.70	3.40	3.50
2.85	1.60	...	Rayrock	40,000	1.70	1.75	1.61	1.65
.05	.02	...	Red Cloud	2,000	.03	.02½	.02½	.02½
.39	.13½	...	Red Crest	353,100	.28	.35	.25	.35
.09	.03½	...	Red Hawk	3,000	.03½	.05	.05	.05
2.70	2.01	...	Reeves McD.	nil	...	2.22	2.46	2.20
2.60	2.25	*.10	Renabie	300	2.45	2.50	2.40	2.40
.75	.28	...	Rexspar	11,400	.35	.34	.28	.28
.08	.02	...	Rice Lake	nil	...	.04	.05	.06
.37	.21	...	R.-Rupununi	31,399	.22	.23	.21	.22
1.20	.80	...	Rix-Athasca	10,600	.85	.85	.80	.80
.26	.14	...	Roche L.L.	8,000	.14	.15	.14	.14
.70	.27	...	Rockwin	6,142	.27½	.33	.27	.33
2.80	2.02	...	Canso Prod.	850	2.10	2.10	2.02	2.10
1.00	.55	...	Canso Warr.	1,000	.85	.80	.80	.80
.48	.30	...	Carleton	200	.39	.33	.33	.33
.25	.10	...	Castle O&G	nil	...	...	...	.19
8.00	4.50	...	Cent. Expl.	8,200	4.75	4.85	4.50	4.50
4.60	2.11	...	Cent. Leduc	18,610	4.10	4.40	4.20	4.30
.65	.20	...	Century	34,900	.35	.35	.30	.34
2.50	1.66	...	Charter	14,900	1.85	1.86	1.80	1.80
.32	.20	...	Claybar	11,000	.21	.21½	.21	.21
..	..	...	Coastal	nil	...	.70	...	†.85
1.25	1.00	1.15	Command	54	†.95	1.00	†.95	1.00
4.00	3.35	*.20	Commoil	100	3.50	4.00	4.00	4.00
5.25	4.10	1.35	Common P.	700	4.50	4.65	4.50	4.65
.70	.21	...	Tache Lk.	136,900	.44	.55	.48	.54
.15	.10	...	Tandem	19,200	.10½	.11½	.10½	.11
.45	.30	...	Tarbell	1,000	.30	.30	.30	.30
.28	.20	...	Taylor B.	500	.27	.27	.27

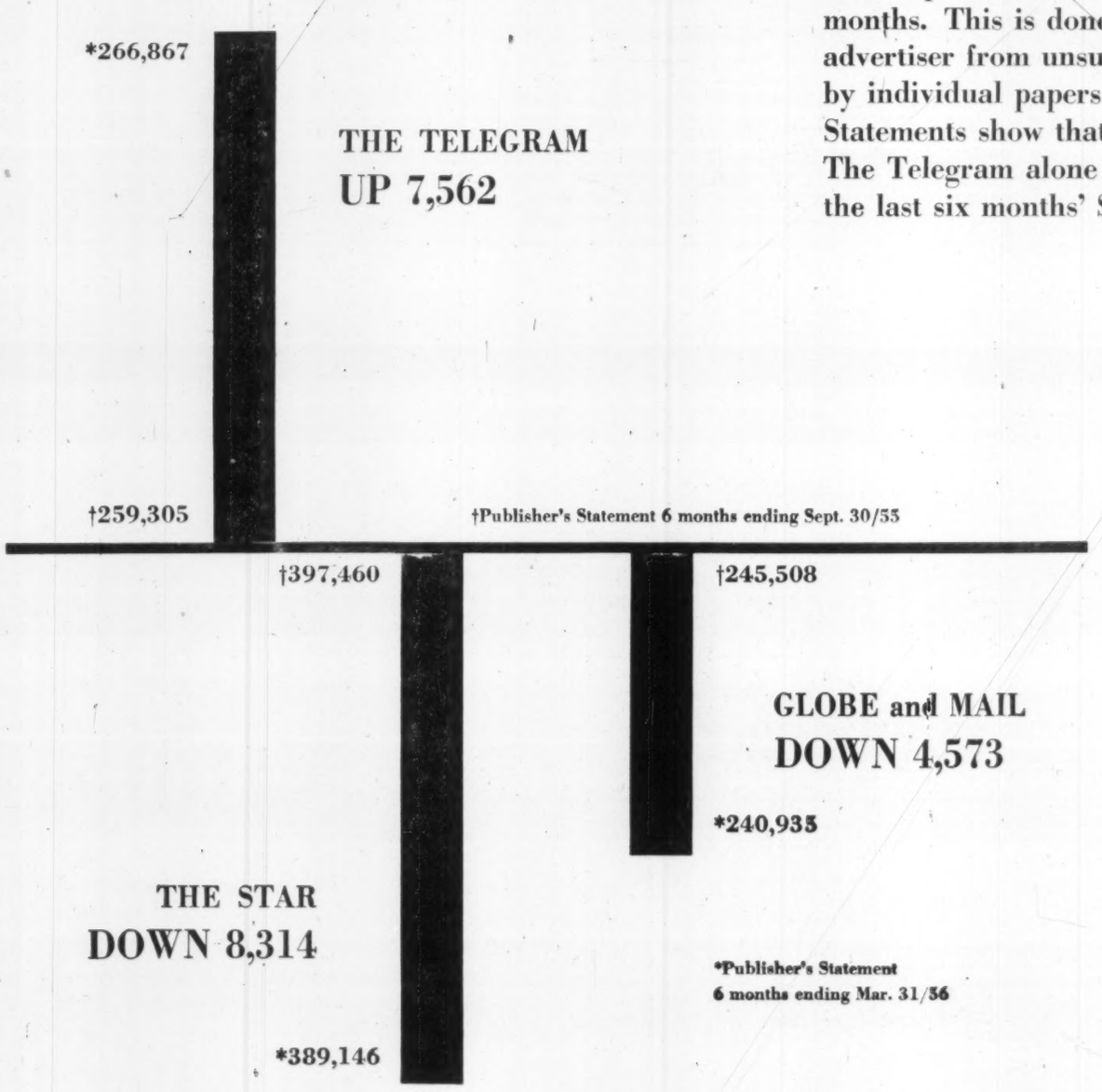
PUBLISHERS' STATEMENTS SHOW THAT THE TELEGRAM IS THE ONLY TORONTO DAILY TO GAIN IN CIRCULATION FOR THE SIX MONTHS ENDING MARCH 31, 1956 OVER THE LAST SIX MONTHS' STATEMENT

The Telegram up

The Star down

Globe and Mail down

All daily newspapers that are members of the Audit Bureau of Circulations have their circulation figures audited every year and submit publishers' statements every six months. This is done to protect the advertiser from unsupported claims made by individual papers. The latest Publishers' Statements show that in Toronto The Telegram alone showed a gain over the last six months' Statements.



THE TELEGRAM

DAILY *plus* WEEKEND

TORONTO 1, CANADA

OVER 600,000 ADULT BUYERS IN CANADA'S RICHEST MARKET · TORONTO · READ THE TELEGRAM DAILY

Wright-Hargreaves Mines Sold

"Jack Allen Group" Buys Long-Time Gold Producer

One of Canada's long-time gold producers that dates back to 1911 — Wright-Hargreaves Mines at Kirkland Lake — this week was acquired by the "Jack Allen group" of gold mine buyers.

Control of Wright-Hargreaves which produced $135.9 million of gold bullion so far has been purchased by Lake Shore Mines, say the buyers.

Lake Shore is part of the string of companies acquired since 1951 by a group of mine financiers and operators including J. C. L. Allen, S. J. Bird and J. G. Boeckh of Toronto and R. C. Stanley, Jr., New York, son of the late board chairman of International Nickel (FP, May 5).

The string of mining companies now held by the group also include Malartic Gold Fields, Perron Gold Mines, Bevcon (formerly Bevcourt), Powell Rouyn and McKenzie Red Lake.

Control in Wright-Hargreaves was obtained by the group from the estate of the late William H. Wright and from Edwin Lang Miller, Buffalo, former president. No indication was given of the amount of shares purchased from these two sources nor of the price paid. Wright-Hargreaves has 5.5 million shares oustanding which at mid-week were trading at $1.90.

Staked by Bill Wright

The original Wright-Hargreaves property in Kirkland Lake area was staked in 1911 by the late Bill Wright. Wright was the backer of the late George McCullagh in the building up of the Toronto Globe and Mail as a national daily newspaper.

Purchase of Wright-Hargreaves by the Allen group was a logical move since the Lake Shore Mines property adjoins on the northeast. Wright-Hargreaves, in its present form was organized in 1916 with milling starting in 1921 with a 200-ton daily capacity mill. Last year, the mill produced at an average rate of 530 tons daily although capacity had been increased to 1,200 tons daily.

Wright-Hargreaves has milled 8,244,000 tons of ore so far. The company has paid $52 million in dividends since 1921 with current rate at 12c annually.

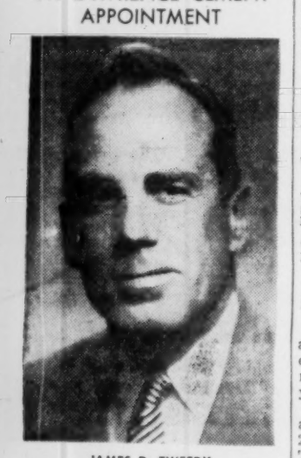
Like other gold producers squeezed by a fixed price for gold and rising costs, Wright-Hargreaves has become increasingly active in outside exploration in recent years. It has a $525,000 participation in Anglo-American Exploration which controls Gridoil Freehold, Leases, Canadian Williston Minerals and other companies in the oil industry. Anglo-American, as well as being interested in Western Canada oil and gas lands also owns an oil refinery and marketing facilities.

Other Wright-Hargreaves interests include base metal prospects in Ontario and New Brunswick and uranium prospects in Saskatchewan. Earlier this year it obtained a 50-year lease on the adjoining Kirkland Townsite property whereby it pays for development costs and is to receive 75% of profits from any ore mined.

New officers and directors of Wright-Hargreaves are Robert C. Stanley, Jr., who replaces Mr. Miller as president, J. G. Boeckh, executive vice-president, M. W. Hotchkin who was managing director now becomes vice-president in charge of operations, J. C. L. Allen is chairman of the finance committee, Miss M. C. Maddigan, is secretary-treasurer, and S. J. Bird and Norman Seagram, Toronto, are directors.

ANNOUNCEMENT

ST. LAWRENCE CEMENT APPOINTMENT



JAMES D. TWEEDY

St. Lawrence Cement Company announces the appointment of James D. Tweedy as Ontario Sales Manager, effective August 1, 1956, with headquarters at their new Clarkson Toronto Plant.

Mr. Tweedy, formerly Ontario Sales Manager for a prominent international manufacturer of Building Materials, is well-known throughout the industry in Ontario.

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NICKLE MAP SERVICE LTD.
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Company Reports

To assist readers in appraising and comparing company financial statements, The Financial Post has a uniform method of presenting corporation accounts. Variations from the companies' published reports are footnoted.

Mining

PEACE RIVER NATURAL GAS CO. is now assured a market for its gas. Construction of the $153 million Westcoast Transmission gas pipeline is now well under way with completion anticipated late in 1957. Pacific Petroleums and Westcoast Transmission Co. have started construction of a gas treating plant and a refinery at Taylor Flats, B.C. These plants will extract and refine various byproducts from "wet gas" being produced by the company's wells. Sale of these byproducts will add considerably to the revenue of the company.

Company directors have recommended that the interests of the two groups—Peace River Natural Gas and Pacific Petroleums — be consolidated. Pacific Petroleums is making an offer to minority shareholders of Peace River Natural Gas for the exchange of shares on an equitable basis.

CONDENSED BALANCE SHEET

As at Feb. 28-29:	1956	1955
Cash	$30,732	$10,663
Accts. rec.	7,394	3,788
Mktable. sec.‡	132,903	132,903
Total curr. assets	171,029	147,354
Misc. assets & def. chges.	5,142	5,890
Invest. & adv.	80,700	80,700
Work in progress	.....	2,216
Prop., plant, equip.†	4,154,485	4,008,831
Total assets	4,411,356	4,244,991
Total curr. liab.	2,215	1,302
Advances from parent co.	7,366	41,414
Capital stock	2,778,050	2,740,050
Capital surplus	1,623,725	1,462,225
‡Mkt. val.	190,820	219,028
‡After deprec. of	224,755	218,593
Working capital	168,814	146,052

INCOME ACCOUNT

Years Ended Feb. 28-29:	1956	1955
Sales	$53,860	$36,945
Less: Royalties	9,733	6,530
Well oper. exp.	3,446	3,141
Total net revenue	40,681	27,274
Less: Gen. & admin. exp.	34,446	20,702
Deprec.	6,140	6,572
Loss on asset sale	95	.....
Net profit & surp.	nil	nil

SILVER STANDARD MINES had a net loss of $88,296 in the year ended March 31, compared with a net profit of $151,714 in the previous year.

Sufficient ore was developed to allow reopening of the mill on May 2, R. R. Wilson, president, reports. The ore is in previously unexplored areas and only minor tests of tonnage possibilities have been done. Grade, he says, is uniformly good. Milling was suspended in Nov.

Development costs after suspension of milling, totaling $104,728 have been deferred and will be charged against future operations. Stoping costs which rebuilt broke ore reserves were included in operating costs.

The ore reserves shown are as at March 31 and do not reflect favorable results since.

Silver Standard has started a two-year program of prospecting in British Columbia in association with three eastern Canada mining companies. Several copper and copper-iron properties now optioned, will be prospected and diamond drilled this season.

Position in Table Mountain Mines was increased to 48% through purchase of 5,800 shares and Table Mountain has enough funds to maintain the property. Development will start when gold mining becomes more attractive.

INCOME ACCOUNT

Years Ended Mar. 31:	1956	1955
Metal prod.	$690,327	$1,452,110
Less: Oper. exp.	668,791	1,126,593
Oper. profit	21,536	325,517
Less: Deprec.	70,375	74,835
Inc. taxes	.....	2,205
Employees' prof. sh.	.....	2,748
Deplet.	5,024	8,228
Dev. w/o	3,281	19,687
B. C. min. tax	4,437	17,157
Loss on secs. & f.a.	.....	640
Outside expl. w/o	40,296	3,800
Add: Sundry inc.	13,580	15,497
Net profit	▲88,296	151,714
Less: Divds.	.....	192,974
Deficit for year	88,296	41,260
▲Net loss.		
Earned per Share	d$0.04	$0.07
Paid	nil	0.08+0.01

CONDENSED BALANCE SHEET

As at Mar. 31:	1956	1955
Cash & deposits	.....	$109,136
Accts. rec.	$4,812	1,931
Inc. tax recov.	58,730	.....
Metals in transit†	.....	26,156
Govt. bonds‡	261,450	310,166
Mkt. secs.*	36,481	36,481
Stores & supplies	56,775	68,909
Total curr. assets	418,248	552,779
Prep. exp.‡	1,197	.....
Misc. assets	4,305	4,305
Outside expl.	19,962	.....
Invests., at cost	23,800	18,503
Devel. exp.▲	104,728	3,281
Mining props.▲	546,318	551,431
Plant & equip.■	83,336	143,136
Total assets	1,201,894	1,273,435
Due bank	5,701	2,746
Accts., etc., pay.	20,174	64,379
Total curr. liabs.	25,875	67,325
Capital stock	816,037	816,037
Earned surplus	359,982	390,073
*Market value	45,300	36,560
‡Market value	251,050	308,113
†After freight, etc., chgs.	.....	15,235
▲After res. of	370,297	367,016
‡After res. of	69,100	64,076
■After res. of	423,999	353,624
‡Incl. in curr. assets in co.'s accounts.		
Working capital	392,373	485,454

OPERATING STATISTICS

	1956	1955
Tons milled	10,048	16,455
Average recovery	$68.70	$88.25
Ore reserves, tons	8,333	12,163
Grade:		
Gold, oz.	0.057	0.107
Silver, oz.	44.3	40.4
Lead, %	5.86	4.65
Zinc, %	5.95	7.26
Cadmium, %	....	0.102

BEVCON MINES had a net loss of $311,408 in 1955, an increase from a loss of $108,590 in 1954.

Operating conditions for gold mines continue to be very difficult but it is felt that every effort should be made to open up the mine with the hope of finding improved ore conditions at depth, R. C. Stanley, Jr., president, states.

Main development was directed in deepening the shaft another 658 ft. to 2,286 ft. with four new levels established in preparation for development drifting, Murray Watts, general manager, says.

Ore reserves dropped chiefly through lack of new occurrences of "zone" type ore which provided the bulk of tonnage and source of gold in initial production stages, he says.

The company purchased 1,186 acres adjoining on the south but five drill holes totaling 4,112 ft. failed to intersect anything of commercial interest. However, much favorable contact area remains to be more fully tested.

INCOME ACCOUNT

Years Ended Dec. 31:	1955	1954
Bullion production	$1,030,329	$1,171,925
Less: Oper. exp.	1,225,162	1,197,377
Net oper. loss	194,833	25,452
Less: Cost-aid	242,624	267,647
Add: Deprec.	180,100	189,476
Preprod. exps. w/o	126,449	126,450
Exp. re outside cls.	15,483	.....
Cap. reorg. exp.	7,441	.....
Interest	20,726	34,859
Net loss & deficit	311,408	108,590

CONDENSED BALANCE SHEET

As at Dec. 31:	1955	1954
Bullion	$39,583	$34,403
Accounts rec.	9,345	7,390
Cost-aid rec.	97,401	109,389
Mat. & supplies	197,351	185,310
Total curr. assets	346,880	336,672
Prepaid exps.‡	24,584	37,049
Preprod. exp.†	885,147	1,011,596
Other defer. assets	250,101	133,771
Mng. props. & cls.	1,006,125	1,002,100
Fixed assets‡	1,903,828	2,059,930
Total assets	4,413,665	4,581,118
Bank advances	149,936	166,621
Accounts, etc., pay.	274,902	198,424
Total curr. liabs.	424,838	367,045
Funded debt	.....	590,000
Capital stock	1,015,680	3,699,325
Contributed surplus	3,359,807	.....
Deficit	386,660	75,252
‡After deprec. of	508,931	359,863
†After write-off of	379,348	252,899
‡Included in curr. assets in co.'s report.		
Excess of curr. liabs. over curr. assets	80,958	30,373

OPERATING STATISTICS

	1955	1954
Tons milled	260,829	263,947
Average recovery	$3.95	$4.44
Ore reserves, tons	251,932	316,203
Grade ($35 gold)	$4.41	$4.62

HOYLE MINING CO. had a net loss of $39,166 in 1955, compared with a net profit of $307,874 in 1954. Market value of securities held increased to $30,514,616 from $7,521,292 at the end of 1954. The company sold additional common shares and convertible preferred and redeemed previous preferred, paying accumulated arrears.

Financial arrangements made during the year resulted in providing funds to further the company's interests, J. M. Cunningham-Dunlop, president, says.

Percentage interest in Consolidated Sudbury Basin Mines was maintained through purchase of 700,000 aditional shares, four claims in Munro township and one in Warden township were sold to New Potterdoal Mines for 200,000 shares of New Potterdoal. A new company Northern Kyanite Mines, was formed on the Kyanite claims in Dryden township near Sudbury.

Other claims held in Ontario were kept in good standing and claims east of Opemiska Copper in Quebec, were also kept in good standing.

The annual and special meeting of shareholders on June 27 will consider increasing the number of directors from five to six and changing head office from Haileybury to Toronto.

INCOME ACCOUNT

Years Ended Dec. 31:	1955	1954
Divds. & int., etc., rec.	$40,185	$35,374
Prof., sale of secs.	218,207	344,474
Total revenue	258,392	379,848
Less: Gen. expens.	81,163	59,871
Loss, sale f.a.▲	8,100	3,504
Salvage exp.	.....	▲178
Adv. to other co. w/o	433,744	.....
Share issue exp.	▲202,187	.....
Ou sptpideorsK		
Outside props. w/o▲	2,364	8,421
Net prof. & surp.	▲39,166	307,874

▲Net loss or deficit.

‡Shown in special surplus account.

Note—Arrears on old pref. shs., amounting to $134,696, paid upon redemption of these shs. in 1955; dividends charged to operating deficit in co.'s accounts.

CONDENSED BALANCE SHEET

As at Dec. 31:	1955	1954
Cash	$2,602,983	.....
Bds. & short-term notes‡	1,997,500	.....
Accts., etc., rec.	31,813	$11,407
Supplies	19,481	19,481
Total curr. assets	4,651,777	30,888
Invests.: Subsids.	44,341	66,280
Assoc. & oth.‡	5,148,692	3,099,023
Advances	133,846	125,201
Misc. assets	9,193	9,000
Deferred dev.▲	204,212	204,212
Outside expend.▲	89,956	106,135
Mining prop.	399,266	399,266
Bldgs. & equip., etc.■	145,093	217,473
Total assets	10,826,378	4,257,478
Bank overdraft	.....	564,874
Other curr. liabs.	5,323	4,641
Total curr. liabs.	5,323	568,515
Advances	.....	91,958
Capital stock	11,389,329	3,990,417
Less: Deficit	568,274	394,412
▲After depr. of	117,758	124,072
‡Market value	1,997,000	.....
‡Market value	30,514,616	7,702,957
▲After w/o	507,529	507,529
▲After w/o	.....	121,414
Working capital*	4,646,454	†538,627

*Excluding investments.

†Excess of curr. liabs. over curr. assets.

M. L. Urquhart Heads Ont. Mining Assn.

M. L. Urquhart, manager of McIntyre Porcupine Mines has been elected president of the Ontario Mining Association. M. S. Fotheringham, president of Steep Rock Iron Mines, was re-elected vice-president.

Four new directors elected are: J. M. Cunningham-Dunlop, president, Nipissing Mines; J. A. H. Paterson, general manager, Mining Corp.; E. A. Perry, manager, Hollinger; R. V. Porritt, director, Pamour Porcupine.

Jump In Gold, Silver Mining

Value of silver and gold mined in Ontario in April jumped 6.37% to $7.5 million over the figure for April last year. The 31 producing mines in Ontario milled 773,885 tons of ore with a content of 214,330 oz of gold, 31,798 oz of silver.

The average grade of ore amounted to $9.71. The Porcupine field, with 13 mines, was the biggest producer, reaching $3.4 million in value. Kirkland Lake-Larder Lake output with seven mines, totaled $2.3 million.

How Proposed Blind River Uranium Merger Will Work

Shareholders of three Blind River uranium companies will meet June 28 to consider a proposal merging the companies into one firm — Northspan Uranium Mines (FP, April 28) — which will be the biggest uranium plant known. The new company will be part of the Rio Tinto mining empire.

Details of the proposed merger involving an exchange of shares were disclosed this week. Under the proposed merger, Northspan will have an authorized capital of 10 million shares of which 6,690,364 will be issued to shareholders of Lake Nordic, Spanish American and Panel—the three companies involved in the merger.

Actually, four different companies might be considered as part of the new company since Spanish American recently absorbed Buckles Uranium.

Here is the basis of the merger.

Shareholders of Lake Nordic will receive three Northspan shares for every four Lake Nordic.

Shareholders of Spanish American will receive one Northspan for each two Spanish held.

Shareholders of Panel Consolidated Uranium will receive two Northspan for every seven Panel.

So far no formal contract for sale of uranium concentrates to the government has been received. However, Rio Tinto, which controls the merging companies, has been negotiating with Eldorado Mining & Refining and it is anticipated that the amalgamated company will obtain a contract.

This contract will be for production by Northspan at an indicated daily tonnage of 9,000 tons, say company officials in letters to shareholders.

Negotiations are under way for financing to bring the new company into production and it is noted that "such financing will represent the largest individual amount of mine financing in the history of Canada."

Advantages of Merger

The merger is seen as having these advantages.

—Combined ore reserves will permit individual ore bodies to be mined with greater selectivity resulting in relatively lower operating costs.

—Centralized management will permit expediting of the work program to meet production deadlines.

—Prospects for contracts after 1962, particularly with the United Kingdom, will be improved.

—Financing will be easier for a single amalgamated company than three independent firms.

Here is how development stands at the three properties.

At Lake Nordic, a contract has been let for design and supervision of construction of a mill. Both production and ventilation shafts have been sunk to about 1,000 ft. and mill site has been cleared.

At Spanish American, a contract for design and supervision of construction of a mill has been let and No. 1 shaft has been sunk to 700 ft. and No. 2 shaft to about 550 ft. Preliminary layouts of the plant have been completed.

At Panel, the main shaft and ventilation shaft have been started. Site for the mine plant which will include crushing and mining, has been cleared. Site for the main concentrator has been cleared and is awaiting engineering details.

ANNOUNCEMENT

DAVID S. CATTON

D. F. Benson, vice-president, Vickers & Benson Ltd., announces appointment of David S. Catton as a senior account executive, in the agency's Toronto office. Mr. Catton was president of the Magazine Advertising Bureau of Canada. A vice-president of the American Marketing Association and a director of the Canadian Public Relations Society, he brings to his new post 20 years' experience in the related fields of advertising, marketing and public relations.

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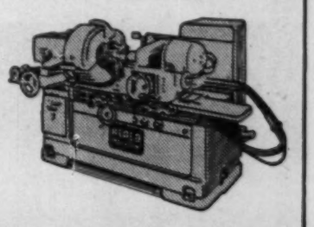

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NORTHERN CANADA?

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EXTRACT FROM MARKET LETTER No. 762 (May 11, 1956)
"Control of NORTHERN CANADA MINES is in new hands and I feel that this stock could have a sharp upward move. Due to the low capitalization (only 1,000,000 shares issued out of an authorized 1,500,000) stock may be hard to get **but I advise purchase up to $1.35.**"

EXTRACT FROM MARKET LETTER No. 763 (May 17, 1956)
"NORTHERN CANADA sold up to $1.65 today on small volume, so I hope you took my advice of last week to buy up to $1.35. Purchase around this level is still strongly recommended. The Company has interests in several exploration bets and I hope to be able to give you details in a subsequent Letter."

EXTRACT FROM MARKET LETTER No. 750 (Feb. 16, 1956)
"NICKEL RIM ($2.20) has been provided with $650,000 through exercise of all outstanding options. This gives the company a working capital of $750,000 and $1,100,000 is due from Falconbridge for concentrates. The shaft is to be deepened to 1,500 feet and milling capacity doubled to 1,500 tons immediately. You can buy this stock for a move through $3.00."

EXTRACT FROM MARKET LETTER No. 757 (April 5, 1956)
"CANADIAN DEVONIAN is my **Prime Recommendation at under $6.00.** It has a net interest of 27,000 acres in the Steelman-Frobisher area of S.E. Saskatchewan. It shares with GULF OIL 35 producing wells. The field is not de-limited yet, but expert oil men predict that **CAN. DEVONIAN's share** of this field will develop 80 million bbls. of oil! I see in this stock the nearest comparison I can find to MERRILL PETE and the Pembina field. I was ahead of everybody at that time in predicting Pembina would become the biggest field in Canada, and strongly recommended MERRILL PETE in the $3 range — MERRILL PETE is now $20. Well, to be conservative, I am now calling CANADIAN DEVONIAN for $10, as drilling proves my point."

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RECENT MARKET PRICE OF NICKEL RIM $4.75
RECENT MARKET PRICE OF CAN. DEVONIAN $7.85

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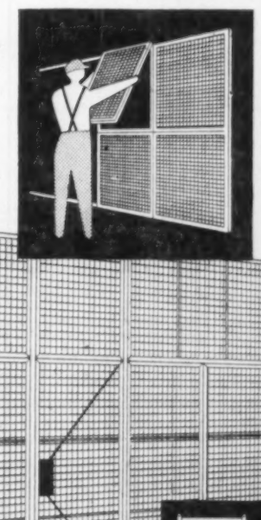

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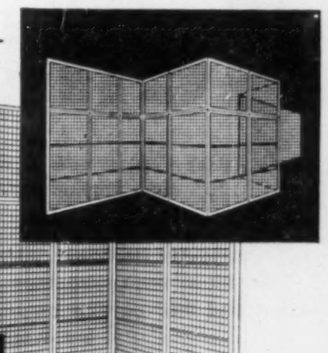

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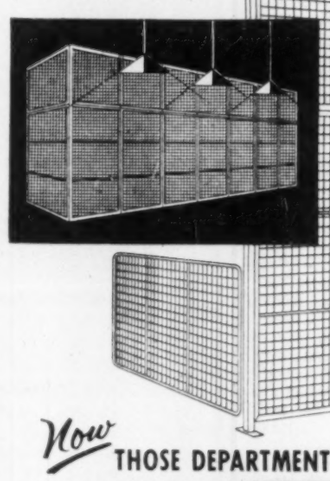

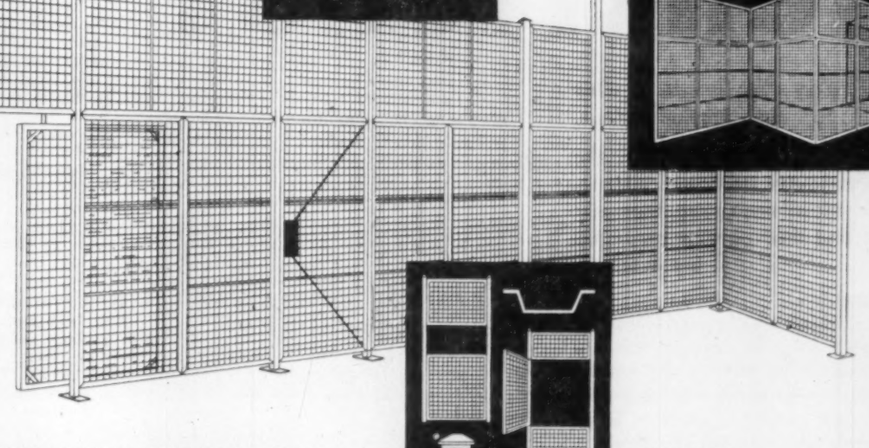

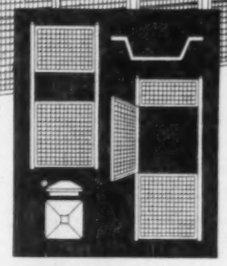

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ANNOUNCEMENT

B-A OIL APPOINTMENTS

E. D. LOUGHNEY

O. I. TORKELSEN

The British American Oil Company Limited announces that E. D. Loughney, formerly vice-president of Canadian Gulf Oil Company, has been elected a director and appointed vice-president of British American Oil, with headquarters in Toronto. Mr. Loughney will be responsible for the executive direction and control of British American's vastly expanded exploration, production and pipe line activities in Canada, as a result of the acquisition of Canadian Gulf Oil Company.

A veteran of 28 years with the Gulf Companies, Mr. Loughney has been general manager of Canadian Gulf since 1951, and vice-president since 1954, responsible for the company's expanding exploration and production operations in Canada.

The British American Oil Company Limited announces that O. I. Torkelsen has been appointed vice-president and general manager of the Company's greatly enlarged exploration, production and pipe line operations in Western Canada, including those formerly conducted by Canadian Gulf Oil Company. He will continue to make Calgary his headquarters.

Mr. Torkelsen has been associated with B-A's exploration and production department since 1939, and since 1953 he has been vice-president in charge of B-A's exploration and production in Western Canada.

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New Search For Base Metals

Investigation of Claims At Manitoba's Oxford Lake

A new company has been formed to investigate base metal possibilities with some precious metal sweetener in an area in Manitoba that 25 years ago was probed for gold. Copper, zinc, silver, and antimony and gold are indicated.

Here's the story.

Allcop Mines Ltd., is planning an extensive examination of three groups of claims covering 4,720 acres in the Oxford Lake area of Manitoba, about 230 miles east of Flin Flon.

These properties have shown indications of copper and zinc, with gold, silver and antimony occurrences also present. Lead-zinc has been reported in the area, although not on Allcop property.

These 118 claims are in three groups spotted over 15 miles in Oxford Lake. The favorable formation in the area is about three miles wide and 50 miles long, K. S. Oliver, president of Allcop, told The Post. So far, a total of about 500 claims have been staked in the general Oxford-Lake area.

Allcop is planning geophysical surveying, geological mapping and diamond drilling on its three groups of claims. A ground electromagnetometer survey will be undertaken in two weeks and two packsack drills will be in operation for shallow drilling until a heavy drill is brought into the area for deeper drilling.

Sufficient funds are available for a full year's work, said Mr. Oliver. EM surveys will be done on the surface of the lake after freeze-up with initial work this summer concentrated on islands and shore-line.

Oxford Lake is about 40 miles long.

Diamond drilling done 25 years ago when gold attracted mine-finders gave gold values in 13 holes averaging .19 oz. over 3.5 ft. on one group. Copper and antimony showings were noted at the time, but little attention was paid to these.

X-Ray Holes

Allcop has done limited prospecting after the ground was acquired in April. On Hyers Island at the west end of the lake where 50 claims are covered by the company, numerous copper occurrences were noted (mostly chalcopyrite). Two short X-ray holes were put down at opposite ends of the island with these results.

One hole gave 11.89% copper over 12 ft. and the other gave 2.2% copper and $1.75 in gold over 7.5 ft.

A report by Consulting Engineer Colin S. Johnston says that a sample across a true width of 8¼ ft. in a trench on the south shore of Hyers Island returned an average of 10.09% copper. A vertical hole put down in the centre of this trench to 23 ft. gave a core intersection assaying 11.95% copper for a 12-ft. sampled length or an average of 6.29% copper across the 23 ft.

"To the bottom of the hole the core showed heavy sulphide mineralization and although high copper values were concentrated in the first 12 ft., there was minor copper mineralization in the remaining footage," says the report.

Zone of Sulphides

On the No. 2 group of 36 claims, stakers found a big zone of sulphides, largely pyritic but with traces of zinc. Earlier work in 1934 on the No. 3 group of 31 claims (the east group) was reported to have shown a mineralized zone of about 1,200 ft. long. Zinc content, at that time, was reported running from 5% to as much as 15% with gold values averaging $10 over 2.5 ft. for about 400 ft. in length. Some silver has also been noted. Mr. Johnston says "it is entirely likely that an important body of commercial zinc lies" at the No. 3 group.

Allcop has raised $120,000 for its preliminary program. Public financing is planned later. The company has an authorized capital of 5 million shares of which 1,200,000 are outstanding.

Officers are K. S. Oliver, president, G. A. Oliver, vice-president; directors: P. H. McCloskey, E. G. Douglas, Jessie Jenner.

Bouzan-Noranda Financing Deal Approved

Shareholders of Bouzan Mines have approved a financing deal with Noranda Mines (FP, April 21) and an increase in authorized capital to allow for underwriting and option agreements with Noranda.

Authorized capital was raised to 7.5 million shares from 6 million with 500,000 new shares to be purchased by Noranda at $2.50. Noranda has options on five additional blocks of 200,000 shares each at $2.75, $3, $3.25, $3.50 and $3.75. (At mid-week, Bouzan shares were trading at $2.76.)

If necessary, additional funds will be loaned by Noranda.

Three Noranda directors were elected to the Bouzan board. They are N. C. Urquhart, H. L. Roscoe and R. V. Porritt. J. J. Coghlan and K. A. Davis are other directors.

Bouzan has started an extensive diamond-drilling program at its McKenzie township mine (Chibougamau area) and preparations for shaft-sinking.

Seven drills will be placed on the Copper Rand-Bouzan Shear and an additional drill is continuing cross-sectioning on the south group of the 1,800 acres owned in Obalski township.

The northern part of the Obalski property is about a mile south of the McKenzie group with west side near Merrill Island. This south group covers the Gouin peninsula for about 2½ miles and Bouzan has water claims both east and west of the peninsula.

Big Stake Rush For Manitoba Mining Claims

From Our Own Correspondent

WINNIPEG—Manitoba's 1955 figure of 8,214 recorded mining claims may be exceeded in 1956, in the biggest rush of northern claim staking since the Lynn Lake discoveries nearly 10 years ago.

Up to mid-June about 5,500 claims had been filed in the re-recording offices at Winnipeg and The Pas. A discovery in the Snow Lake area in April by Hudson Bay Mining and Smelting Co. started a trek of prospectors to the north with a resulting rush to the recording offices from five to 10 times the usual.

The new discoveries reported valuable deposits of base and previous metals, including considerable showings of copper and zinc. Most of the claims between Cranberry Portage and Herb Lake have been filed by Hudson Bay Mining and Smelting Co.

The provincial mines branch has increased its staff personnel in the north to take care of the applications.

Before April the number of recordings ranged between 90 and 120 a month. In April after the new find at Snow Lake was announced there were nearly 2,000, in May 1,560, and up to mid-June another 1,800.

Before 1955 the biggest number of claims staked in a single year was 6,752 in 1947. In the intervening years up to 1955 the recordings have been 2,973 in 1948, 2,454 in 1949, 2,073 in 1950, 2,391 in 1951, 2,624 in 1952, 4,412 in 1953, 3,031 in 1954, and a record of 8,214 in 1955.

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Nuclear Development Ends Bar To Industrial Growth

The importance of uranium to Canada's industrial development was outlined by Dr. R. L. Hearn chairman of the Ontario Hydro-Electric Power Commission at the 37th annual meeting of the Ontario Mining Association this week.

Development of nuclear fission as a source of energy removes what might have been a definite barrier to Canada's industrial growth, said Dr. Hearn.

Industry faces the problem of supporting a vastly - increased population in the face of accelerated depletion of traditional raw materials.

The key to this situation appears to be development of new energy sources like solar and nuclear, with nuclear energy likely the answer long before the sun's power can be harnessed.

Production of uranium already assures an adequate supply for a long-range power program.

The problem: "We need only find a way to build nuclear power reactors that are competitive with coal, oil and gas-fired thermal plants, and then proceed to try to meet the cost of energy produced by hydro-electric plants," said Dr. Hearn.

Dr. Hearn believes that nuclear power at considerably reduced cost is less than 10 years away. Ontario Hydro expects that it will be economical for base load operation by 1965.

"In order to meet demands of 21.9 million kw within the next 25 years, our total resources may reach some 23.6 million kw," Dr. Hearn explained. "That compares with the 4.5 million kw of capacity today.

"The interesting point is that of the 23.6 million kw Ontario may develop by the end of 1980, only 5.5 million will be from conventional hydro-electric generating stations, 10.6 million from conventional thermal - electric sources, and 6.5 million kw from nuclear-electric generation."

Impact on uranium mining — here's Dr. Hearn's view:

"When you realize that we are dealing only with Ontario in these figures, I think that the uranium mining people will agree that the potential market for this mineral is exceedingly encouraging."

New Jaculet Report 3% Copper Hole

A 36-ft. intersection assaying 3.31% copper has been cut by New Jaculet Mines on its property in the Chibougamau area.

Claimed to be one of the deepest holes drilled in the area, hole V-17 at a vertical depth of 1,330 feet, cut 25 ft. assaying 4.38% copper, or 36 ft. assaying 3.31%.

This hole is still drilling the main zone at 1,940 ft. and will be continued in an effort to cut the No. 2 North zone at a vertical depth of 1,800 ft. Hole V-17 is below V-8 which assayed 5.14% copper and .083 oz. gold over 30 ft. at 350 ft. vertical depth and V-12 which intersected 25 ft. assaying 5.42% copper and .026 gold at 580 ft.

These three holes — V-17, V-8 and V-12—represent a section to a vertical depth of 1,330 feet averaging 30.3 ft. in core width with an average grade of 4.5% copper.

The No. 1 South zone now has a proved strike length of 1,650 ft. from east to west and is open at both ends, R. P. Mills, president, says. Three holes drilling on the No. 2 South zone proved a strike length of 900 ft. open at both ends with assays on the latest holes in this zone still to be received by the company.

New Jaculet has stepped up its exploration program with the addition of six drills to bring the total on the property to 12. Six drills are on the No. 1 South zone, three on the No. 2 zone and three on the North zone.

The company, recently reported some 2,800 tons of ore per vertical foot indicated and its accelerated exploration program is aimed at obtaining sufficient information to locate a shaft and map out underground exploration. Target date for its objective is the end of August.

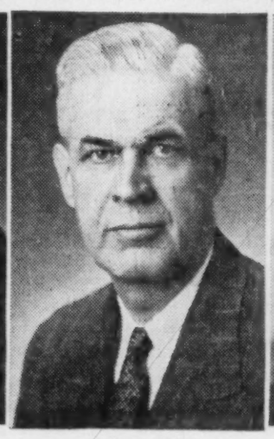
Surface construction consisting of additional camps, bunk houses and docks is under way.

BRITISH AMERICAN OIL CO. during May issued 34,045 common shares upon conversion of debentures, due Aug. 1, 1961; 215,360 shares upon conversion of debentures, due June 15, 1962; and issued 3,020 shares from treasury. Now 9,491,583 common shares outstanding.

ANNOUNCEMENT

BAILEY METER APPOINTMENTS

A. L. STEWART

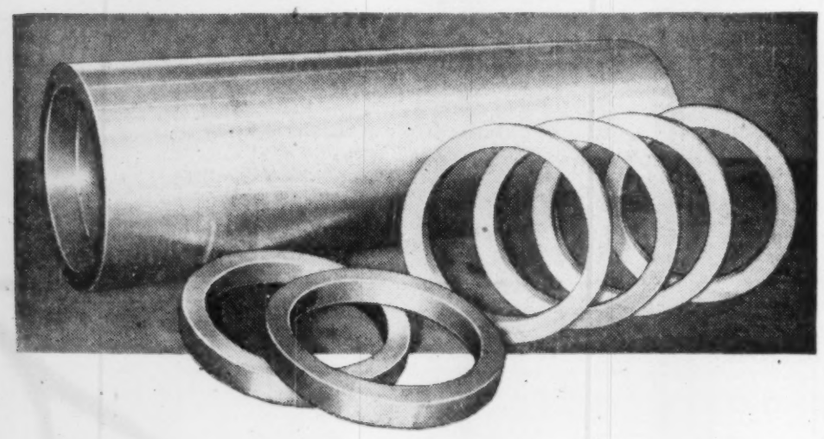


E. W. R. BUTLER

G. H. SONNE

R. S. COFFIN, Chairman of the Board of Directors of BAILEY METER COMPANY LIMITED, announces that at a recent meeting A. L. STEWART, formerly Vice-President and manager, was elected President. E. W. R. BUTLER, formerly assistant manager, was elected Vice-President; and G. H. SONNE, C.A., formerly head of the accounting department, was elected Secretary.

KENNEDY CAN CAST IT



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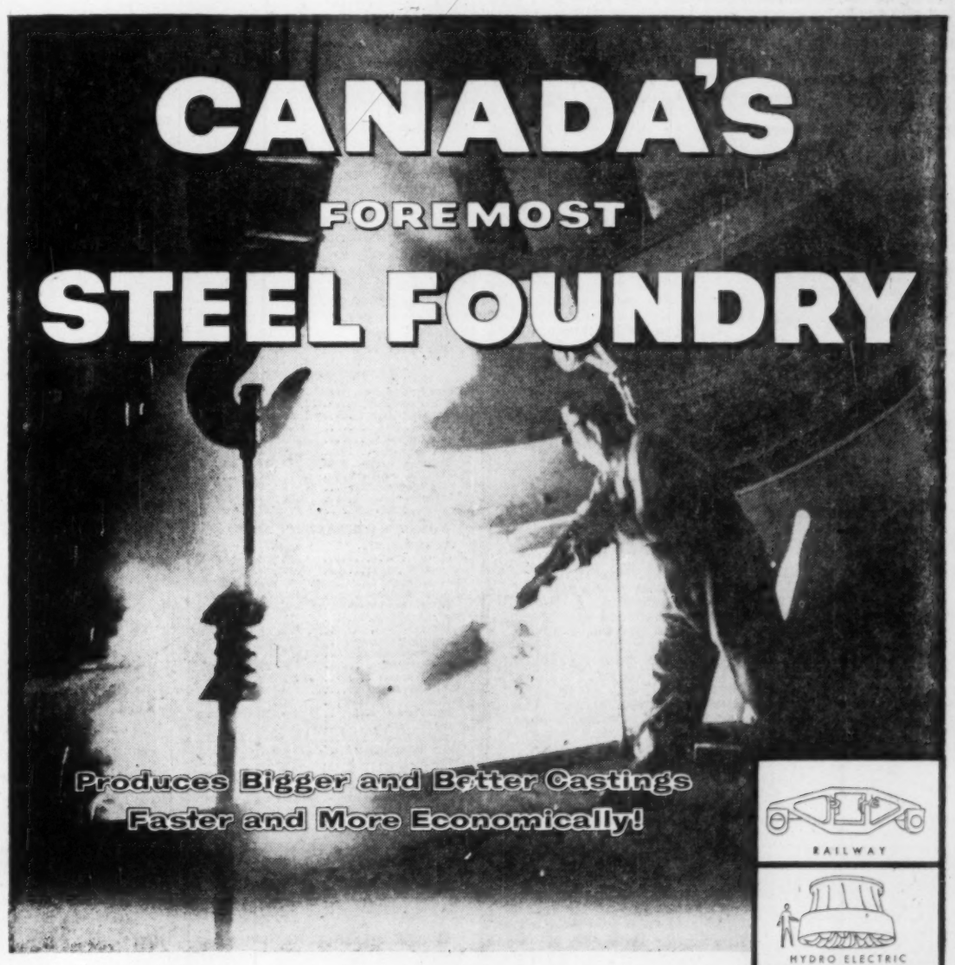

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MINING INVESTMENTS

Can-Met Gets Green Light For Uranium Production

The go-ahead signal has been given Can-Met Explorations to bring its Blind River uranium property into production. At mid-week the company signed a contract with Eldorado Mining & Refining for sale of $75,852,000 of uranium concentrates. Previously, Can-Met had received a letter of intent from the Crown company (FP, Feb. 25).

Stephen B. Roman, president of Can-Met, reports that arrangements for raising $18 millions through sale of bonds have been completed.

It is expected that $12 millions of the bonds will be offered shortly to the public while $6 millions will go to secure bank loans. The bonds to be offered are expected to carry warrants to buy Can-Met shares.

Two shafts are going down on the Can-Met property and an area is being cleared for construction of a 2,500 ton mill and other equipment. The mill and leach plant are expected to cost $18 millions with production target date set for April 1, 1957.

• • •

Ventures Face-Lift

The Ventures organization is getting a face-lifting. R. B. Anderson, new president of the widespread mining empire, told the annual meeting that increased attention is being given "management control" and two management consulting firms are studying the company.

Primary emphasis is on "strengthening and clarifying" the organization and introducing better budgetary and control procedures.

Purposes of the new look at Ventures and associated companies include development of management in depth—a particularly acute problem because of increasing demands on mining talent.

• • •

Dominion Drill

Dominion Gulf, a subsidiary of Gulf Oil, has completed over 16,000 ft. of diamond drilling on a columbium prospect at Nemegosenda Lake in the Chapleau area of northern Ontario. Two drills are working on the property to extend known ore zones and to investigate additional potential zones. Metallurgical studies on the ore are also under way. The property is 14 miles north of Multi-Minerals.

Drilling has tested about a mile of the six miles of favorable contact. Here are the results with values taken by quantitative X-ray fluorescence analyses and widths in core lengths.

—**Zone A.** Three holes along a 300 ft. length gave an average value of 0.45% columbium pentoxide (Cb205) over a 116 ft. width. Rare earths of the cerium group are also present.

—**Zone B.** Parallels zone A and is also a magnetite-bearing pyroxenite zone. One hole gave 0.54% Cb205 over 16 ft. and 0.55% over 58 ft. An X-ray drill hole 800 ft. south of this intersection stopped in ore with an 8-ft. section assaying 0.54%. Four more holes have proved continuity for 700 ft. to the south and gave 0.46% over 92 ft., 0.38% over 190 ft., 0.46% over 85 ft., and 0.40% over 155 ft. of core.

—**Zone C** is non-magnetic biotite-orthoclase breccia, cut by one hole which gave 1.36% columbium pentoxide over 25 ft.

—**Zone D** is acmite-felspar with major tonnage potential, says Dominion Gulf. Four holes along a 600-ft. length gave 0.61% Cb205 in 372 ft. of core, 0.465% in 614 ft., 0.67% in 280 ft., 0.44% in 200 ft. and 0.52% in 124 ft. The last two results are in one hole. This zone has a possible 1,300 ft. length, before being offset by cross-faults.

—**Zone E** is a dyke of coarse biotite, felspar, apatite, magnetite and acmite with three holes along a 700 ft. length giving an average value in four intersections of 0.43% in 43 ft. of core.

—**Zone F** is similar to E. Cut in three holes along 1,600 ft., it gave an average value in three intersections, is 0.37% in 165 ft. of core.

—**Zone G** is similar type mineralization in a breccia zone. It was cut in two holes 400 ft. apart with average value 0.55% columbium pentoxide in 65 ft. of core.

• • •

Nickel-Copper Stake

Jellicoe Mines has staked a nickel-copper prospect in the Kakigi Lake area which is reported lying between two blocks of claims staked by the subsidiary of a major U. S. mining company on the basis of an air survey. This area is about 25 miles southwest of Falconbridge Nickel's nickel-copper deposit at Populus Lake, John S. Grant, president of Jellicoe, reports.

The company has also added nine claims to its holdings in Shebandowan area adjoining Coldstream Copper. An electromagnetic survey is under way on the 129 claims in the area.

• • •

Mid-Chibougamau

A new issue of 2,999,999 shares of $1 par of Mid Chibougamau Mines Ltd. has been placed privately at 60c by a syndicate of investment dealers headed by W. C. Pitfield and Co. Price was 60c per share.

Proceeds will be used to defray costs of work and for general corporate purposes. Policy of the company will be to acquire and investigate mining claims with favorable geological locations. A permanent field office is being established in Chibougamau. This summer four geological parties will conduct detailed investigation and geophysical exploration of properties.

Capitalization now consists of an authorized 5,000,000 shares of $1 par of which 2,900,000 shares are outstanding.

• • •

Copper Price

Because of strength in the Canadian dollar (FP, June 16), International Nickel has adjusted its price for Canadian domestic copper deliveries to 45 3/8 Canadian cents per pound delivered Toronto. This price corresponds to the published 46 cents U. S. price for primary copper.

ANNOUNCEMENT

Calvert Appointment

WILLIAM H. MORGAN

has been appointed National Sales Manager of Calvert Distillers Limited. Associated with the company in Western Canada since 1950 and resident in Vancouver, Mr. Morgan has served as an officer of the B. C. Lions Football Club since its inception, and of the Advertising & Sales Bureau of Vancouver. He will make his headquarters at the Head Office of the company in Montreal.

Advertisement

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Coldstream Drill Shows New Copper

Drilling on the third level of Coldstream Copper Mines property 70 miles west of Fort William, Ont., has run into what may become a new copper zone, the company reports.

A flat-hole at the 475 ft. level pulled a "good-looking" section 75 ft. long." This hole —U217—visually should average 2% copper from 25 ft. to 100 ft., a report from the property says. The hole is still drilling in ore which may prove to be well over 100 ft. in width, the company says.

This zone will have to be drilled at 25 ft. intervals instead of the 50 ft. spacing generally followed.

Coldstream is presently installing a 1,000-ton concentrator on its property. Ore has been reported at averaging 2,500 tons to a vertical foot of 2% and better-grade copper. A recent estimate placed ore reserves at better than 4,000 tons of 1.5% copper per vertical foot.

J. W. ELSHOUT

has been appointed president and general manager, Berkel Products Co., Toronto.

Mackeno To Start Milling Keno Hill Ore Reserves

Mackeno Mines is resuming milling operations at its silver-lead-zinc mine in the Keno Hill district, Bryan W. Newkirk, president, announces.

The company has built up ore reserves of about 37,774 tons averaging an estimated 41.2 oz. silver, 9.2% lead and 11.7% zinc of which about 90% are ready for mining or milling.

These reserves are sufficient to supply the mill for eight months at 125 tons daily but Mackeno plans to stretch milling to at least a year by using 100 tons daily of the 41 oz. silver ore plus 25 tons of low-grade ore.

Over-all mine grade is expected to run about 37 oz. silver per ton.

Mr. Newkirk says the company's consulting engineer estimates an operating profit of $35,000 to $40,000 a month from resumed milling operations.

Mackeno previously temporarily resumed milling operations last fall after closing down in January.

Mill feed will be drawn from between the third and fourth levels mainly with some coming from the first level.

The new fifth level south drive has entered the zone of favorable quartzites and is making ore, Mr. Newkirk says. Due to water flow driving is being carried on in the hangingwall with cross cuts to the vein at regular intervals.

Two cross cuts at 25 ft. intervals have entered high-grade mineralization, it is reported. In the first, width was confined to a few inches and the second encountered ore on the hangingwall assaying 91 oz. silver per ton across 18 in. Lead and zinc assays are awaited.

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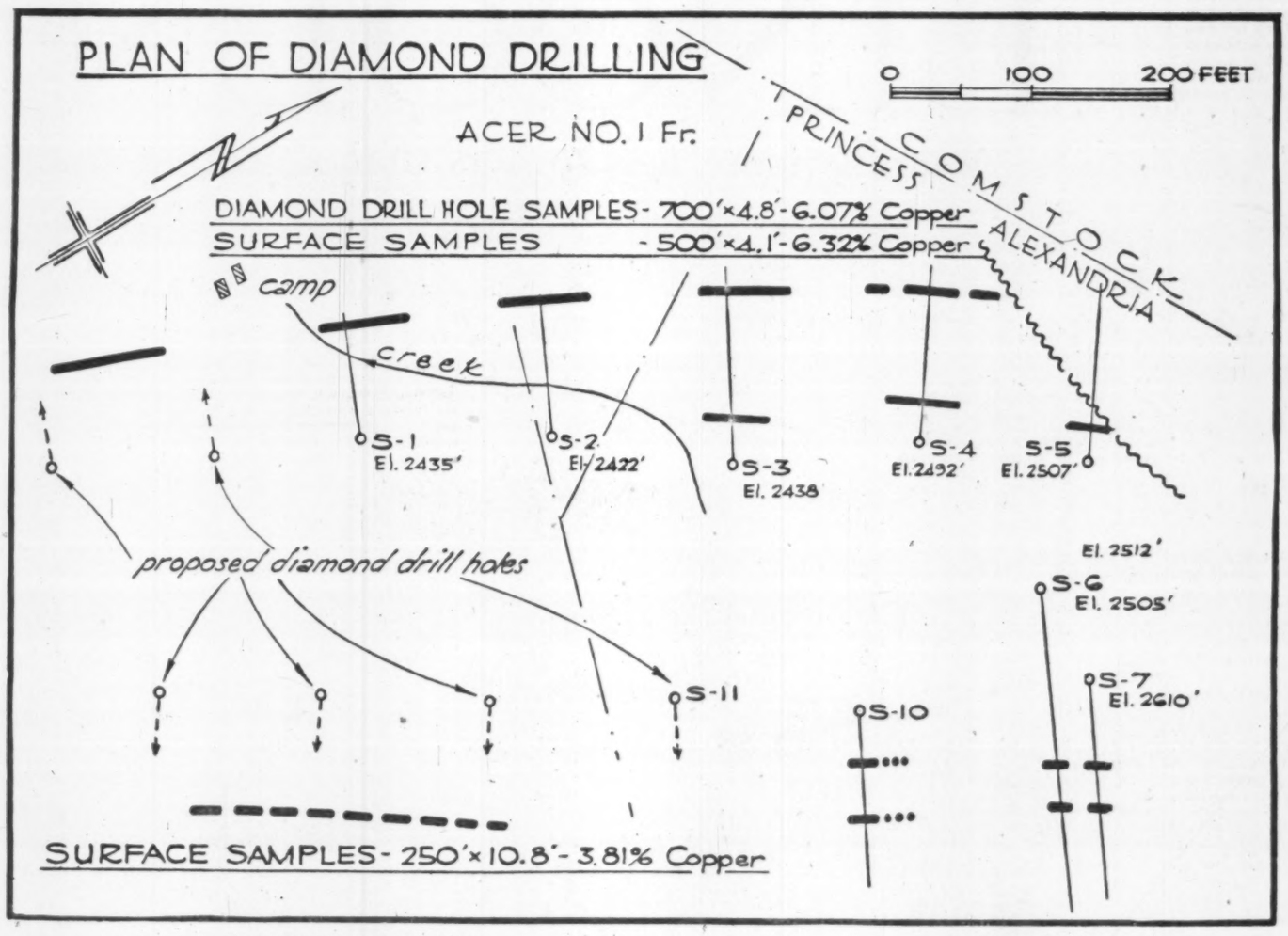

PRINCESS - GERTIE VEIN

TRACED DEFINITELY: 6900 feet by 34 exposures, from elev. 2145 to elev. 4190 (upper 2400' to be staked).

AVERAGE WIDTH: 7.7 feet from 34 measurements of definite tracing.

AVERAGE GRADE: 2.56% Copper (mainly leached outcrop).

SAMPLES AND ASSAYS

Width-Ft.	% Copper	Location of Sample	Sampled by
5.0	2.6	Princess May	Granby (Conway)
5.0	3.47	Princess May	Collinson
12.0	2.2	Princess Alexandria	Knobel
5.0	4.27	Princess Alexandria	Collinson
8.5	3.10	Anaconda	Knobel
8.5	2.01	Anaconda	Knobel
6.5	2.21	Anaconda	Knobel
6.0	3.80	Anaconda	Granby (Conway)
8.0	2.40	Anaconda	Granby (Conway)
4.0	2.56	Anaconda — D.D.H.	Granby (Conway)
10.0	2.00	Anaconda	Granby (Newton)

(Extract from Report J. T. Mandy, P.M.E.)

7.1	2.56	Weighted Average

Diamond Drilling — 1955

Hole No.	Width	Copper Assay
S. 6	6.7 Feet	1.4%
	3.0 Feet	1.4%
S. 7	3.0 Feet	2.1%
S.10	3.0 Feet	2.3%
	2.0 Feet	2.1%

(Extract from Report F. J. Hemsworth, P.M.E.)

ANACONDA VEIN

Diamond Drilling — 1955

Hole No.	Width	Copper Assay
S.1	6.0 Feet	5.3%
S.2	3.0 Feet	4.3%
S.3	11.0 Feet	9.2%
S.4	8.0 Feet	4.4%

To a depth of 150 feet this ore shoot is calculated to contain 35,000 tons of 6% ore, at 40¢ a lb. equal to $1,680,000.00 gross.

(Extract from Report F. J. Hemsworth, P.M.E.)

- Camp buildings consisting of sleeping quarters, cook house, and warehouse and office now completed.
- Additional diamond drill now enroute to property.
- Systematic sampling of underground workings on Outsiders Group to be started this week.

BIDCOP MINES LIMITED

357 Bay St. Toronto, Ont.

(Third in a Series of informational bulletins to shareholders. This week featuring diamond drilling on Princess Gertie and Anaconda Veins.)

Letter from London

by Adelphi

What a week! Forgive the exuberance but Ringling's Circus in its greatest days never equaled the variety of entertainment which London has offered from this particular Monday to Friday.

Just to start it off there was the annual Conference of Women Conservative Associations where a Tory M.P. named Mrs. Emmet made a speech from the platform defending her action in voting for the abolition of capital punishment.

The audience was overwhelmingly against her, so much in fact that toward the end of her speech they booed so loudly that she could not be heard. After a brave attempt to ride the storm she had to give up, and retired from the unequal contest to the accompaniment of the loudest boo of the afternoon.

Booing is not allowed in the House of Commons but if it were Home Secretary Gwilym Lloyd George would have heard it from the Socialists on his announcement that he had deported a Greek Orthodox priest domiciled in London. The charge against the priest was that he had indulged in constant anti-British propaganda.

Then there was the hilarious scene when the Tory victor of the Tonbridge by-election went through the ordeal of taking his seat in the Commons. Tonbridge is a country constituency which invariably returns a Tory with a large majority. But in this by-election the fall in the Tory vote was catastrophic. In fact the winner just scraped home.

As the young man, escorted by the Chief Whip, marched to the table to sign the book the Socialists roared with ironic laughter. It is difficult to explain to you the humor of a Socialist who shouted: "Put him on the Scottish Grand Committee!" but the House has its local jokes which are not for the public ear.

Row Over Trinidad Oil Sell-Out

Immediately afterward there was a continuation of the row over the Trinidad Oil sell-out to America. I had a talk on the previous evening with Mr. Simon Vos, the chairman of the Trinidad Company, who assured me with quiet intensity that the people of Trinidad would never forgive the British Government if it prevented the deal going through.

Lord Beaverbrook's newspapers have been the staunchest champion of Prime Minister Eden and the strongest opponents to the Trinidad sell-out. Assuming that the deal will go through the politicians are wondering if the Beaver will revert to his former anti-Eden policy when Sir Anthony was foreign secretary.

In such a week it was only fitting that the last British troops left Suez. Perhaps the ghost of Disraeli walked that night.

Just to complete the picture the House staged an all-night sitting on the Finance Bill which meant that the members went home in broad daylight only to re-assemble after lunch.

Certainly the rights of the private M.P. to talk all night and day on finance must be respected but what of the Chancellor of the Exchequer who has to stay in the Chamber throughout the whole debate? Perhaps you order these things better in Canada.

Welcome Invasions From Outer Family

Incidentally, judging from West End, there must be only a few of you left in Canada. The Canadian troops are stealing the show at the Royal Tournament, the Canadians are crowding the threatre, and London hotels seem entirely occupied by Canadian visitors.

All this is to our delight. Our kinsmen from across the Atlantic lose their hearts to London. And no wonder! The great old capital is at its very best in the shimmering sunshine of not quite a flaming June.

There is, however, another invasion from the Outer British family which has a very different note—in fact a sinister note. The Australian cricketers are here with the evil intention of capturing "The Ashes" from us and taking them home.

So seriously do the British take their cricket that in this year's honors list Len Hutton, a professional cricketer who captained the England team, was knighted by Her Majesty—which is all to the good. Yet even cricket is coming under the survey of those economists who think that the first duty of the workers is to work. They have even gone so far as to make the suggestion that cricket should be played at night by floodlight. It is certainly disturbing to see thousands of men making their way in the morning to Lord's or The Oval to watch the white-flanneled chap at the wicket.

However, despite these deviations from the narrow path of duty I am glad to report that Chancellor Macmillan has just told us that consumption of goods is down on the previous year, that government expenditure is being cut, that productive investment and the output of capital goods continue to rise and that exports are showing a steady increase.

Mood Is Vigorous But Confused

No wonder the Stock Exchange is buoyant. Yet things are not quite so simple as that. If one had to express the mood of Britain at the moment it would be something like this: "Things are going well but there is something seriously wrong."

Perhaps that serious thing is the mood of the middle classes which include the professional and retired business men who live on pensions. The cost of living has lost touch with pension income. People who lived sparingly in order to pay premiums on endowment insurance find that the amount is inadequate to their necessities.

With all these discontents, one might think that this is the moment for the resurrection of the Liberal Party, but I am afraid it would be crushed between the Tory and the Socialist giants.

Thus we have this paradox. Sir Anthony Eden is personally popular but his Government is definitely unpopular. The people would like a change but they do not want Socialism. As everybody is now in spirit either a Left Wing Liberal or a Right Wing Liberal there is no chance for a Liberal Party. The middle of the road on the public highway or in politics is the path to disaster.

You will gather from all this that Britain is in a vigorous but confused mood, and you would be quite right in that deduction. But despite its internal conflicts there is an underlying optimism. Labor relations are better than they have been for a long time and that is very important.

And as the long Parliamentary Summer Recess approaches the harassed ministers will be able to carry out their plans without the day-to-day Grand Inquest of the House of Commons.

U.S. Quashes Import-Quota Amendment

Special Correspondence

WASHINGTON—An attempt to put handcuffs on the U. S. trade policy by imposing new import restrictions has been beaten down in Congress.

Hundreds of millions of dollars in U. S. imports would have been seriously affected had the measure gone through.

The protectionist attempt was made in connection with the U. S. Foreign Aid Bill. An Amendment was proposed for the bill which would have restricted imports of agricultural products and commodities made from the farm produce.

In an intense debate in the Senate Foreign Relations Committee, the amendment was defeated nine to four. The amendment was proposed by Senator Theodore Green of Rhode Island who aimed it at keeping out Japanese textiles.

His amendment, however, was worded so that it had far-reaching implications, affecting a considerable part of all U. S. imports.

The amendment would have imposed quotas on all farm products in which the U. S. has a surplus. The quota would have been set at the average of the preceding three years. Senator Green had intended that the amendment apply only to countries receiving U. S. foreign aid, and as such, Canada would not have been affected.

However, with this foot in the door, protectionists may well have been able to lever the door a bit more to make the amendment more general, observers here believe, thereby hitting Canada.

The administration bitterly opposed the amendment. They told the Foreign Relations Committee that the U. S. Tariff Commission can deal with the problem. Senator Green said the commission so far has failed to restrict the rising Japanese textile imports. In addition, the administration said, the U. S. has Section 22 of the Agricultural Adjustment Act, which restricts imports if they tend to undermine U. S. price support policies.

It is under this section that most of Canada's farm exports to the U. S. are restricted.

The administration also said such a protectionist action by Congress would cause incalculable harm in international relations for Uncle Sam.

After hearing the administration's pleading, the committee decided to reject the Green amendment.

ANNOUNCEMENT

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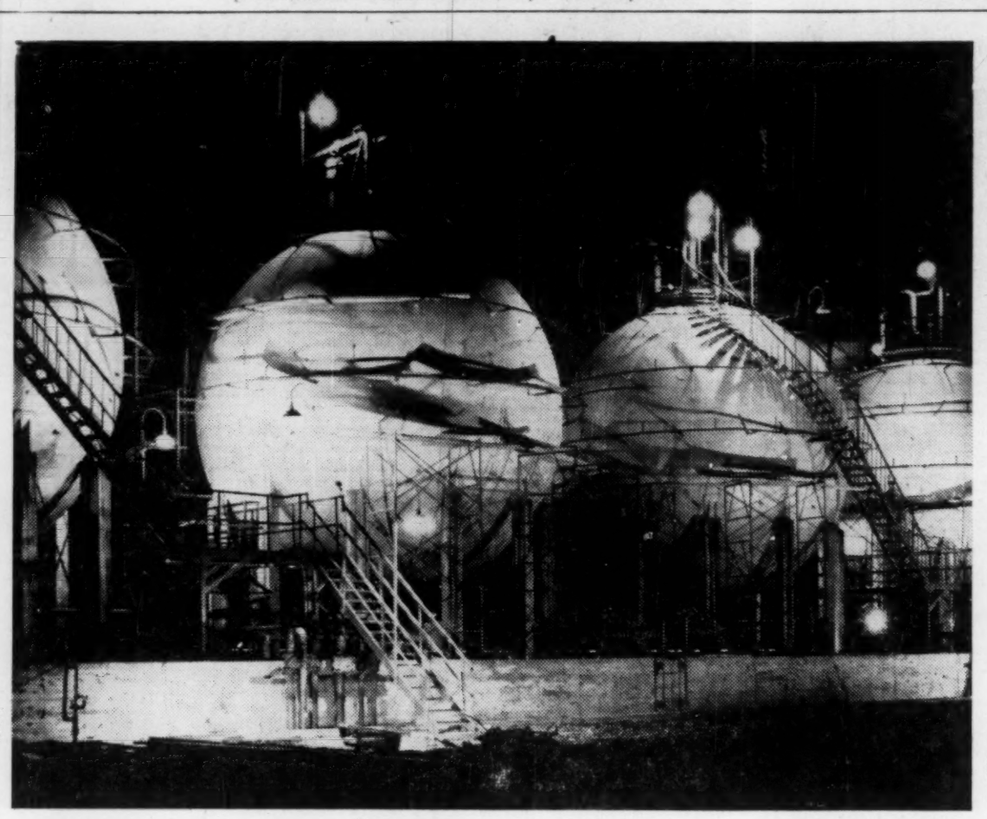
Chemical research twice benefits Canada.



Giant new plants spread wealth.

New products, like plastic bottles, improve living . . .

New Wealth Brews in Chemical Plants

Canada's chemical industry has launched its second major postwar expansion program — a $200 million outlay for new and expanded plants, spread over all sections of the industry and from Vancouver to Montreal.

The petrochemical group is accounting for almost half of the expansion program. Construction of two major gas pipelines — with the tremendously increased supplies of light hydrocarbons and sulphur — will lay the groundwork for another boom in the petrochemical division.

How soon new plant programs are lined up, to take advantage of the low-cost raw materials, depends on domestic market growth, tariff policies, freight rates, etc.

Meantime the continued high industrial tempo is steadily expanding the market for a long list of chemicals that play parts in hundreds of processing steps in the manufacture of virtually every product that comes out of today's factories.

By W. L. DACK

If just a year ago anyone had suggested that in a few months the Canadian chemical industry was about to embark on a $200-million expansion and diversification program he would probably have been told he was out of his mind.

Even the development experts whose job it is to anticipate markets, plan new plants, were pigeonholing new projects as fast as they came up. The postwar chemicals expansion boom was definitely slowing down.

Then almost overnight the whole picture changed as last fall's runaway markets started to telescope into a few hectic months the normal market growth of a couple of years.

"Things just started to roll and they've kept rolling ever since," is the way one development head put it.

Quickly the pigeonholed projects were snapped out again and bold new undertakings put on to the planning boards.

It's a truism in the chemical industry that one must plan and build far beyond current markets. But today the planners are doing that with a greater confidence in their multi-million dollar decisions than at any time in the history of the industry.

This is how they look at it:

- There is a strong industrial momentum building up in this country such as rolled the huge U.S. chemical machine to its pre-eminent world position between the two World Wars.
- With this country's tremendous natural resources riches, fast-growing population and increasing technical know-how, Canadian industry is going to keep growing and diversifying probably at a faster pace than industry anywhere else in the world.
- The recent forecast of one major producer before the Gordon Commission of an expansion in chemical production in this country of over three and one-half times during the next two decades certainly doesn't look out of line.

Busiest In Industry

There briefly is why the chemical development people today are the busiest in the industry — that, plus the knowledge that their competitors probably feel the same way about it and could beat them "to the draw" on some of the new plant projects.

A glance into their planning books today is like an exciting preview into an industrial drama soon to unfold:

—Imperial Oil getting into petrochemicals in a big way, seriously considering new plants to recover substantial quantities of the big three petrochemical building blocks — ethylene, butylenes and propylenes. This could have a major impact on the whole future growth pattern of Canada's Chemical Valley.

—Dow Chemical of Canada now embarked on a second big expansion phase; looking seriously at the hot plastic — polyethylene; diversifying production further along the integrated ethylene-chlorine highway.

—Union Carbide Canada nearing construction completion on unique integrated plant set-up at Montreal East to produce in time dozens of ethylene oxide derivatives and early next year, polyethylene resins.

—Shawinigan Chemicals, one of the most active Canadian companies research-wise, significantly broadening its raw material base of operations with new plants to make caustic soda and chlorine and sulphuric acid.

—B.A.-Shawinigan doubling capacity of its Montreal East petrochemical plant to produce phenol and acetone in line with buoyant phenol demand from synthetic resins producers.

Diversifying Products

—Shell Oil of Canada boldly diversifying at its Montreal East plant with new products just added, others to be announced.

—Du Pont Co. of Canada adding another wonder fibre "Orlon"; jumping into the big healthy explosives market with a new North Bay plant; eyeing the hydrogen peroxide picture.

—Canadian Industries Ltd. building the biggest ammonia plant in Eastern Canada in line with anticipated market growth in fertilizers, pulp and paper industries, etc.; planning new hydrogen peroxide plant with eye on newsprint bleaching market.

—Dow Chemical and North American Cyanamid both installing facilities to produce for first time in Canada Xanthate mining chemicals.

—In the West one $22-million fertilizer plant nearing completion at Medicine Hat, Alta., another, equally as costly, in active planning stage for Winnipeg area.

—Besides all that the big developments that will follow building of the two natural gas pipelines, under construction this year.

This is what the Westcoast Transmission line to pipe Peace River gas south to U.S., and the Trans-Canada pipeline to pipe Alberta gas east to Ontario and Quebec will mean:

—A potential recovery of enough sulphur from sour gas to balance out Canada's current 360,000 tons-a-year import bill.

—Tremendous storehouse of petrochemical building blocks in form of butanes, propanes, ethanes.

And behind each new plant, each expansion move, exciting marketing and process stories.

The rush into polyethylene resins reflects the skyrocketing sales pattern of this amazing plastic material. In 1955 close to a 50% jump over previous year. This year so far running about 50% ahead again.

Pulp and Paper Boom

Steadily climbing pulp and paper output bringing with it boost in caustic soda and chlorine capacity. Two plants have just expanded. Three new ones are now in planning stage.

Even before Noranda Mines gets its big 500-ton a day sulphuric acid plant into operation at Blind River, Ont., it's faced with greatly expanded acid requirements from additional uranium producers in the area. In time this camp could require 1,500 tons of acid daily for leaching processes.

The whole mining picture is exerting a steadily increasing impact on chemicals; both from the standpoint of the quantities and types they require in new chemical processing steps and the new by-product chemicals that are, and will be, produced. When the huge columbium ore bodies in Ontario and Quebec are developed — as almost certainly they will — certain basic chemical requirements, possibly including chlorine, will expand very sharply.

This is one reason why it is so difficult to forecast market expansion in the chemical industry. Not only does almost every product of industry require chemicals at some stage in its manufacture but they are requiring a greater proportion of them as research chemists introduce chemicals into more and more processing steps, fashion more and more end products out of them.

Research chemists have learned to tailor-make synthetic fibres, plastics, refrigerants and antibiotics to an amazing variety of product specifications. Yet industry leaders believe this move is still in its infancy; that its potential contributions to medicine, the construction industry, the textile industry, auto manufacturers, etc., will be very much greater.

Automobile Plastics

Look what's happening in case of auto manufacture. There is now an average eight lb. of plastics materials going into every new auto. That proportion will double in a couple of years, auto people say, as more and more metal and textile parts are replaced.

Look at the contribution in the construction field. Plastics today are going into wall coverings, floor tiles, counter tops, screening, plastic panels for interior partitions, and skylights. More recently, they are being examined for use in wall construction. For the future, plastic products are destined to be used for making prefabricated roofs and floors.

Actually most chemical people maintain that the industry's greatest expansion over the next few years will likely be associated with natural resources developments — chlorine and caustic soda as pulp and paper expands further; nitric acid, explosives, as big mining, public works programs boost explosives requirements; more sulphur and sulphuric acid to keep up to expanding mining — particularly uranium — and general industry demand; more ammonia for fertilizers, pulp and paper making. Most of the end products these industrial chemicals are going into enjoy sizeable export markets.

But in the case of the organics — petrochemicals — where, by the way, the greatest expansion is now taking place, not only are export markets virtually shut off but manufacturers are not even assured a major portion of their home market. Canadian chemical leaders feel very keenly about this, particularly in view of the very high initial capital cost connected with these intricate processing steps and the adverse competitive unit cost position that comes from smaller output.

Alberta Storehouse

The chemical officials have eyes particularly on the Alberta situation. Probably nowhere else in the world is there such an attractive storehouse of low-cost chemical raw materials building up. Besides the huge supplies of light hydrocarbons materials to be recovered from natural gas, there'll also be plenty of sulphur.

There's lots of salt for that all-important starring combination, chlorine and caustic soda. There can be low-cost ammonia from plentiful supplies of natural gas.

There's limestone. From the biggest post-war petrochemical plant in the country — the $75-million integrated textile-organics chemical plant of Canadian Co. at Edmonton, there's available a broad range of important industrial chemicals and solvents.

Every major chemical company in Canada — and a few outside of Canada — have looked with eager eyes at this raw-material treasure house and then sadly pigeonholed their studies for future reference. Markets within economic scope have been too limited to justify the high capital expenditures associated with these programs.

On the average it costs around 2½c a lb. to freight chemicals from Edmonton to Toronto and Montreal. This pretty well renders chemicals in the 5c to 15c lb. price range noncompetitive, unless they are subsidized by other profitable products integrated in the same over-all operation.

Actually freight rates from the big Texas coast petrochemical region to Ontario and Quebec are a little lower than the Edmonton-Toronto-Montreal rates.

With the exception of chemical fertilizer materials, tariff hurdles into U.S. render profitable movement southward of big bulk of Canada-made chemicals virtually impossible.

Western Development

But all this does not preclude big chemical plant developments in Western Canada based on hydrocarbon raw materials. Exclusive technological know-how can overcome all kinds of disadvantages — for a time. Where low-cost products can be upgraded into higher priced materials; like upgrading 3c-4c-a-lb. formaldehyde into 30c-a-lb. pentaerythritol, high freight rates can be more comfortably absorbed.

The U.S. might relax their tariffs on some organics sufficiently to permit limited access — and that would be all that's necessary to swing new plant projects—into parts of their country.

Finally, the Prairie market is growing fairly rapidly, with a gradually increasing development of diversified industry that could absorb chemical products.

Of one thing the chemical people are certain. Something must be done, in next several years, to economically utilize the substantial quantities of hydrocarbon and sulphur raw materials that are going to be made available as a result of construction of the two major gas pipelines.

In the meantime there's a continuous market chain reaction going on within the chemical industry itself. Invariably every new chemical plant that comes on stream creates markets for other chemical producers; both for established chemicals and chemicals still not made in Canada.

First Sodium Plant?

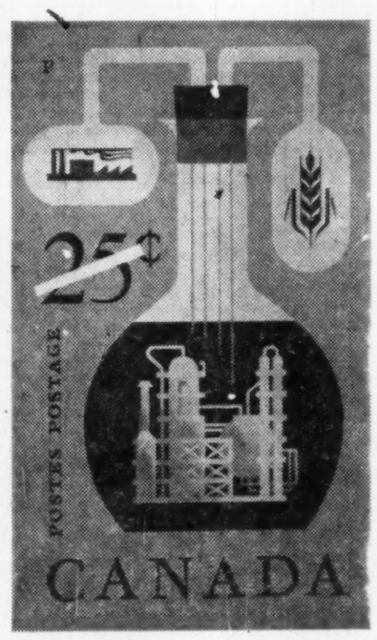
The big tetraethyl lead plant of Ethyl Corp. of Canada now nearing completion at Sarnia will almost certainly mean early construction in the area of a new plant to make ethyl chloride — a basic raw material. In time the TEL plant could be basis for Canada's first sodium plant.

Polymer Corp. — the big Crown-owned synthetic rubber producer — has now expanded production to the point where it has outrun its domestic supplies of one of its basic raw materials, butadiene. It is practically certain now that a butadiene plant will be announced over next two or three months.

Canadian Industries Ltd.'s new Terylene plant and Du Pont of Canada's new Orlon plant will almost certainly form the market incentive for establishment in time of new plants in this country to make such important chemicals as terephalic acid and acrylonitrile.

Then these new plants in turn will help boost the gradually rising chemical requirements for domestically made and imported products. Thus the chemical chain reaction moves out endlessly from its starting point and as it moves it shapes the direction of future industry growth.

All the time, white-coated research chemists moving about their weirdly equipped laboratories are creating entirely new forms of matter that in turn will start off entirely new chain reactions.



CANADA'S POST OFFICE has recognized the growing chemicals industry in this new 25c stamp. The retort and distillation equipment symbolize research. The enclosed silhouettes symbolize improved agriculture and production.

Unknown Products

Many of the new petrochemical producers, for instance, are now deriving most of their sales revenue from products that were unknown 20 years ago. The plastics industry alone has been doubling itself every five years. Not only has it been making huge inroads into markets held exclusively by long-established materials but at the same time it has been responsible for a broad range of entirely new products used in entirely new applications.

By learning how to tailor-make the synthetic resins that go into plastics, for specific uses, the plastic producers have been able to boost the potential of their industry enormously over the last couple of years even. Yet the chemical research people say the raw material possibilities have scarcely been scratched.

Every major chemical producer is stepping up his research activities right from the solving of customer product problems to the long-haired, fundamental variety. Not only is the Canadian economy attaining the stature which provides incentive for innovation but the competitive selling drive associated with costly capital expansion programs, higher fixed charges, is bringing a new value to new products, new marketing developments.

"It is becoming more and more an axiom of survival that Canadian industry of any consequence should undertake its proper share of research, to develop a technology suited to Canadian needs," states Herbert H. Lank, president of Du Pont of Canada.

Canadian Chemical Co., Canadian Industries Ltd., Dow Chemical of Canada, Shawinigan Chemicals, Union Carbide Canada are just a few of the larger companies that are adding new research people, expanding laboratory facilities.

New Scope In Products

In the last few years the product breadth of Canada's chemical industry has grown rapidly. New plant facilities have been built to make for the first time in Canada such products as polyethylene, ethylene glycol, acetone, phenol, isopropyl alcohol, formaldehyde, pentaerythritol, tetraethyl lead, sulphur, sulphur dioxide, titanium dioxide, etc. All this has cut import dollar outlay very sharply, has provided the domestic industry with a broader readily available storehouse of raw materials. Still greater product diversity is certain to grow out of this.

In time the Canadian market will assume large enough proportion to justify capital outlay for plants to manufacture a greater variety of synthetic resins in this country, dyestuffs, pharmaceuticals, fine chemicals—now imported.

A feature of the $114-million—12%—expansion in chemicals output last year in Canada, in which every major chemical group, but two, participated, was a sharp rise in exports, particularly to overseas customers. Booming conditions in U.K. and in European countries, improved exchange positions, have been big factors. Exports, however, are pretty well limited to such items as fertilizers, synthetic rubber, and some plastics — especially vinyls and polystyrenes.

Canada's big synthetic rubber producer, Polymer Corp., is maintaining itself in peak condition to hold its 10-year long foreign markets against sharpened U.S. export competition. Currently some 60% of Polymer's 115,000 tons annual output is going overseas. Efficiency and production is being improved at every possible turn.

For some years now Polymer has been able to steadily step up production from essentially the same plant setup, without any major capital expansion.

Competitive Position

A sharp increase in exports of fertilizers during the past year more than overcame a flattening-out in demand in this country. Consolidated Mining & Smelters — the biggest factor in the whole chemical export picture — experienced a sizeable boost in exports of its nitrogenous type fertilizers, particularly to off-shore countries. With slowing demand both in this country and the big U.S. Pacific Northwest market, C.M. & S. again actively promoted its far-foreign business.

Canada is still a net importer of chemicals, although the import margin is relatively small — some $50 million in the latest year. The U.S. is still our greatest customer and in turn sells us the greatest proportion of our imports. Pharmaceuticals, synthetic resins, fine chemicals, etc., bulk large in the chemical import picture.

Canada's chemical producers have been insistent that in all fairness Ottawa review the whole chemical tariff setup. Federal tariff authorities have promised this and there is some hope now that the hearings will be called for this fall. Because of the broad range of their operations, the widely varying export-import dealings, it has taken a lot of "give and take" for the chemical industry to come up with anything approaching a uniform stand on tariffs. Even yet there is considerable difference of opinion on how best to go about the improved marketing picture that all desire.

Some think best results will come from raising Canadian tariff walls on a list of items to a point where domestic producers will be assured most of the domestic market; others think Ottawa should press for lowered tariffs for Canadian chemicals — particularly the organics — into U.S. Some think both measures should be pursued. All, however, agree that a broad review of the entire tariff picture is long overdue in the light of the broad postwar expansion program.

And Tomorrow?

What do the leaders in the chemical industry think of the future? What will be the outstanding trends from here on? Here they are in order of importance as gathered by The Post in a recent cross-country survey of the chemical leaders.

1. After the current big expansion wave new plant projects will slow down in the petrochemical industry. On the other hand capital outlay for expanded plant facilities in the inorganics — sulphuric acid, chlorine, caustic soda, ammonia — will likely pick up. These last moves will be connected closely with such natural resources developments as new mining activities, expanded pulp and paper operations, etc.

2. A big increase in essentially Canadian research by all the main companies. This trend will be particularly noticeable in the Canadian subsidiaries of large U.S. chemical organizations where formerly most of the research work was carried on. Already big companies like Du Pont of Canada, Dow Chemical of Canada are stepping up their research activities in this country.

3. There will be an increasing trend in many branches of the industry to carry products closer to end consumer level. This will be particularly so in the high polymer field — fibres, plastics, synthetic resins, etc. This will be looked on increasingly as part of the merchandising responsibility of the basic manufacturer.

4. Increasingly the big basic producers will step up their technical services to industrial customers. Already this trend is under way with majority of companies ready to offer expert technical and marketing advice. This will mean heavier employment of already scarce engineers, will put a still greater strain on available supplies of graduating scientists each year.

Big, Fast Growth Ahead in Petrochemicals

• They're Finding Man New Products
• We Have Plenty of Oil and Gas
• Problem: Where to Build? How Big?

"To be in the petrochemical industry today in a fast-growing country like Canada is one of the most exciting business experiences I know of."

The speaker was development head of one of the fastest-stepping chemical firms in the country.

It's not just that demand is growing so fast and in so many different directions. But the research people are finding so many new things they can do with petroleum hydrocarbons.

With a starting base of ethylene, for instance — one of the most versatile of the invisible hydrocarbon families—a chemical company can advance along an almost limitless product highway: ethylene glycol for antifreeze, polystyrene and polyethylene plastics, ethanolamines for gas purification, etc.

Then there are the other major hydrocarbon families — the propylenes and butylenes; the product potentials are almost as great again.

Any development department worth its salt has trained eyes on a number of new product possibilities long before it is economically sound to build a plant to make them.

But they can't afford to look too long without doing anything. The industrial tempo has speeded up today and faith in Canada's future has become so buoyant that there are always one or two companies ready to go into action.

Development people will tell you that's one of their greatest nightmares today. With the entire Canadian market scarcely large enough to support even one plant, to be beaten "to the draw" invariably means dropping out of the race entirely for several years and giving a competitor clear sway.

But in several noteworthy cases where postwar petrochemical plants appeared to have been built "too soon" in this country, company officials are already planning their first expansion move.

Pace will speed up

Now that the big oil companies are all jumping into the petrochemical field, as well, there could be quite a stepped-up development pace over the next couple of years.

For instance, the decision of Imperial Oil to move into petrochemicals in a big way could have a major impact on the industry in this country. Reflecting the increasing trend in U. S. where many oil companies are starting to construct light hydrocarbon recovery plants for sale and/or processing of their own products, Imperial is believed to have plans to recover large quantities of all the major light hydrocarbons—ethylenes, propylenes, butylenes. The costly recovery plants would be installed as sufficient long term sales contracts to processing industries were negotiated.

But the big significance of such a program to Canada is this: availability of substantial, long-term supplies of increasingly hard-to-get light hydrocarbons is going to attract new processing industries to the particular refining area.

Decision of Canadian Oil Cos. to expand its petrochemical manufacturing facilities with a $3-million installation at its Sarnia refinery to extract benzene, toluene and xylene from petroleum is a major factor in announced expansion program of one of the major chemical firms in the area.

From a raw material standpoint Canada's petrochemical industry is particularly well-blessed with supplies — actual and potential—of the all-essential hydrocarbon building blocks that today are going into virtually hundreds of industrial and consumer items. With oil reserves now close to the three billion barrel mark and a 100% boost in refining facilities in last five years, refinery stream hydrocarbons have thus far been keeping pace with petrochemical requirements.

As for the other major source of raw materials—natural gas—the supply picture is even more reassuring. The big factor here is construction of major pipeline systems to feed the Western Canadian gas to large scale markets in Eastern Canada and U. S.

When these are completed—and the two major pipelines will be under construction this year—and gas starts flowing in big volume to market, large volumes of condensates will become available. The gas from some of Western Canada's biggest gas fields will have to be processed for their wet hydrocarbons and sulphur before they can be fed into gas pipelines.

Canadian Gulf Oil Co., for instance, estimates that when its big Pincher Creek gas field in southern Alberta is delivering its full quota to Trans-Canada Pipe Lines it will be recovering some 8,000 b/d of condensate (butanes, propanes, natural gasoline, etc.) and 800 tons daily of sulphur.

The $18-million gas processing plant being built by Pacific Petroleums Ltd. and associates to process Peace River gas preparatory to delivering it to the Westcoast Transmission Co. pipeline is expected to produce some 300 bbls. of propane and 600 bbls. of butane daily as well as 500 bbls. of diesel oils and 275 tons of sulphur.

These plants will have a good deal of flexibility in the proportionate output of their various products. But these large daily supplies of propane and butane will constitute a tremendous storehouse of petrochemical building blocks—raw materials that could end up in time in dozens of products, synthetic fibres, plastics, paints, antifreeze, dyestuffs, pharmaceuticals, rubber, etc.

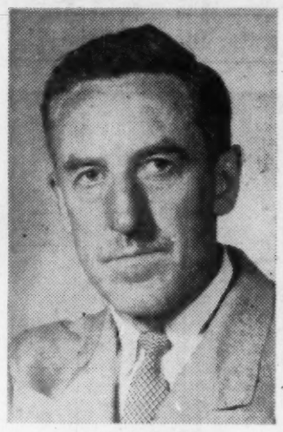
Wealth in the West

Every major chemical company in Canada—and not a few outside Canada — have taken a close look at this Western Canada picture. Besides the large supplies of liquid hydrocarbons which will probably be priced lower than any place in the world, there'll be a plentiful supply of other key chemicals such as sulphur, salt for chlorine and caustic soda, plenty of ammonia available from natural gas.

From Canada's biggest petrochemical operation of all — the $75-million textile-petrochemical operation of Canadian Chemical Co. at Edmonton — there's a broad range of more than a dozen industrial chemicals to use in various processing steps.

But geographic locations of this hydrocarbon treasure-house—separated by long, costly rail hauls from the big Ontario and Quebec markets — and by both rail haul and prohibitive tariffs from the U. S.—is causing company after company to pigeonhole their grandiose plant schemes for the time being.

But large petrochemical developments in Alberta are as certain as the development that has taken place in Texas. The waiting period — until domestic markets catch up, and/or tariff regulations are adjusted — may not be as long as many people think.



W. L. DACK

As The Financial Post's Chemical Industries Editor, Mr. Dack used his wide experience and many contacts in the chemicals field to compile this special report. Mr. Dack is an Arts graduate of Queen's University, Kingston, Ont. He taught school and worked in the investments field before joining The Post in 1944.

In the meantime the Westcoast Transmission gas pipeline is under construction with completion date scheduled for next fall. The gas processing plant near Fort St. John, B.C. will be completed by that time as well. It is practically certain now that the western leg of the trans-Canada gas pipeline will be completed this year; with chances seen good for the next major section—the stretch from Winnipeg to Toronto — being completed by late 1958 or early 1959. It is when this second stage is completed and/or large-scale gas shipments are going into mid-northern U. S. states, that the gas pipeline will have to draw heavily on the "wet" gasfields which will provide bulk of the light hydrocarbons for the petrochemical industry.

The eventual disposition of all the by-product hydrocarbons is a big problem already causing a lot of brow wrinkling in the West. It may be that a sizeable portion of the butanes will have to be fed back into the ground for storage and/or for re-pressurizing oil pools.

Polymer's Problems

The case of Polymer Corp.—the big Crown-owned synthetic rubber producer — which must soon make a vital decision about its future butadiene supply aptly illustrates one of the basic problems facing petrochemical developers in Western Canada today.

Domestic and export demands for Polymer's rubber products have outrun its butadiene supply—along with styrene, the basic raw material for synthetic rubber manufacture. For some months now Polymer has been forced to import some 25% of its butadiene requirements from U. S. suppliers.

In view of plans for further over-all expansion in its rubber output, Polymer is now seriously considering plans to construct a butadiene plant based on butanes. The two obvious sites being considered are Alberta—possibly near the big Pincher Creek field—and Sarnia.

The initial quantity of butane required for butadiene manufacture is estimated at around 600,000 barrels per year. While the butane raw materials from Alberta gas fields will be far less costly than from refiners in Sarnia, who would have to construct a special costly plant to recover the butanes, against this must be balanced the long costly rail haul of the processed butadiene from Alberta to Sarnia.

Also being considered is the possibility of transporting the butanes to Sarnia along with crude oil through the Interprovincial oil pipeline. This has never been done before over such long distances and subject to such wide temperature ranges. At the moment there is considerable difference of opinion about likely operating results.

But since it will take close to two years to construct the approximately $15-million butadiene plant Polymer has in mind, officials will have to make a definite decision soon. One thing is certain, that for the quantity of butane-butylenes Polymer will require for its new plant any Sarnia refiner would have to construct a multi-million-dollar recovery plant. This unit would have to be flexible enough to recover butanes from any one of several oil "cuts."

Both of the Montreal East petrochemical units — B. A.-Shawinigan Ltd. and Shell Oil Co. — are further expanding and diversifying production.

A few days ago B.A.-Shawinigan announced a major expansion at its Montreal East petrochemical plant that will boost phenol and acetone output a further 50%. On top of earlier production boosts, this will just about double plant capacity from originally announced figures of 13 million lb. of phenol and 8 million lb. of acetone annually. A very buoyant phenol market has been big factor in expansion move.

Shell Oil Co. has plans to further diversify production at its Montreal East plant, now specializing in isopropyl alcohol and acetone output. Additional facilities are also being constructed to manufacture methyl ethyl ketone and secondary butyl alcohol.

In whatever part of Canada the petrochemical developments are taking place, the heavy expenditures on new plants and equipment have taken a lot of courage. In practically every case to be economic the plants have had to be built with a designed capacity at least as large as the entire domestic market; in some cases considerably beyond this. But with a highly developed and still expanding chemical industry to the south and no — or only moderate — tariff protection, there could be no assurance that the Canadian plants would be able to capture even a fair slice of the home market.

The most modern plants and know-how and, in some cases, close association with big U. S. organizations, have been tremendous aids. But even with this it has been obvious that competition would be keen from the start and could get a whole lot keener when surplus capacity built up in the U. S. chemical industry.

Because transportation costs from Texas to Toronto-Montreal are less than from Edmonton; and because the Gulf Coast producers have all the cost advantages of large plant operation, Canada's first polyethylene producer has found the struggle for the Canadian market sharply competitive. The $15-million Edmonton plant of Canadian Industries Ltd. has had to face sharp competition right from the start.

The 7½% tariff protection awarded last year has improved their competitive position somewhat. But it has been the sharply rising demand for the popular plastic both in Canada and U. S. that has enabled C.I.L. to boost the operating level of its plant throughout last year to a point where some expansion of capacity is now being considered.

The biggest of the postwar petrochemical projects—the $75-million combined textile and petrochemical operation of Canadian Chemical Co. at Edmonton—is counting on low-cost raw materials and fuel coupled with certain processing know-how to enable its dozen or so industrial chemicals to overcome the obvious marketing disadvantages of long transportation hauls to Eastern Canada and export markets. Right now the petrochemical unit is operating slightly above rated capacity.

Bulk of its No. 1 chemical, pentaerythritol, is going to U. S. markets, some to European countries. A strong plywood glue market on the West Coast is helping absorb a large part of company's formaldehyde output.

Dow Chemical of Canada, one of the fastest growing chemical firms, has chalked up a record of some dozen new plants in the last eight years at its waterside site in Sarnia's spreading Chemical Valley. Based chiefly on chlorine and ethylene raw materials, Dow is advancing along a fairly broad, but clearly defined, product highway. Well advanced on a new $10-million expansion and product diversification program, Dow has just

(Continued on page 51)

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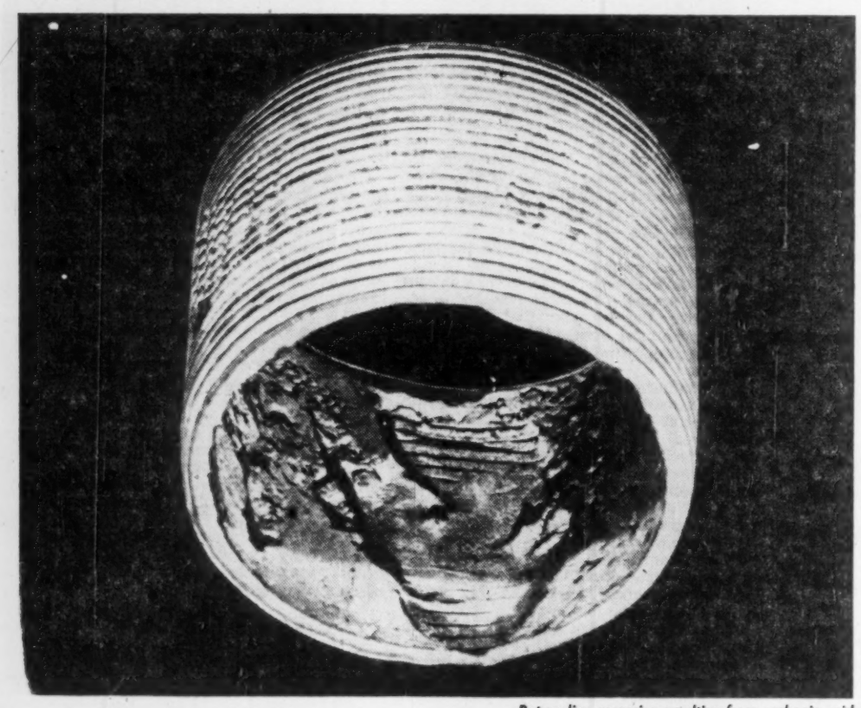

Return line corrosion resulting from carbonic acid

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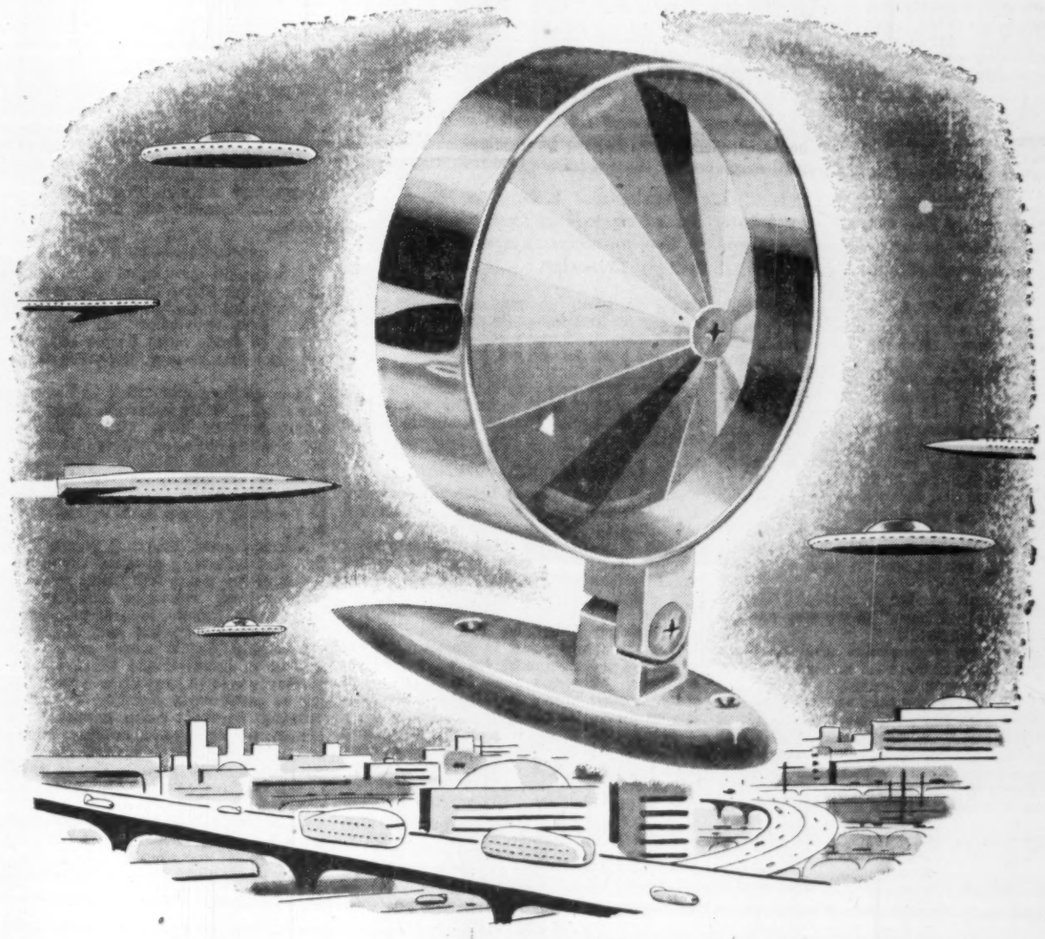

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The Growing Pains Of Petrochemicals

(Continued from page 50)

recently upped its production targets even further.

Preliminary engineering is now under way for new plants to produce polyethylene (possibly by the new, low-pressure method), fluorinated hydrocarbons and Styrofoam. At the same time, company officials are considering construction of a new plant to produce xanthate chemicals, used in the mining industry.

By early next year Union Carbide Canada's first big step into the petrochemical processing field in this country will be fully integrated and ready to "go on stream." This multi-million-dollar Montreal East plant — probably the biggest petrochemical project under construction in this country today— will be the first unit in Canada to produce ethylene oxide by the direct oxidation of ethylene; it will also be the first operation in which production of ethylene oxide and polyethylene are related. Union Carbide engineers are proud of the flexibility they have built into this integrated plant. They make no bones about it: this has been set up to meet the broad market growth in organic chemicals in this country over the next few years. Their plans envisage production "for the first time in Canada" of a range of ethylene chemicals, now all imported into this country. Some 100 derivates of ethylene oxide have already been successfully marketed in U. S. and Canada. The field is big.

That part of the process that converts ethylene oxide to ethylene glycol has been in operation now since early last year. Union Carbide has been importing the ethylene oxide and processing into ethylene glycol. But the oxide derivatives unit is expected to be in operation late this year producing chemicals such as the ethanolamines, glycol ethers, and polyethylene glycols. The polyethylene unit is not expected to come on stream until a couple of months later.

The raw material—ethylene—will be extracted from by-product gases of neighboring refineries of Imperial Oil and McColl - Frontenac Oil, plus cracked liquid petroleum fractions.

B.A.-Shawinigan Ltd.

Company officials have just announced a major expansion at its Montreal East petrochemical plant. This will boost phenol capacity to around 26 million lbs. In the process, acetone capacity will also be boosted from around 8 to 16 million lbs. level. Some of the acetone, which until recent few months has moved slowly, will go into isopropyl alcohol and other derivates.

A buoyant phenol market has been big factor in decision to expand. Canadian phenol requirements have been growing every year and B.A-Shawinigan intends to remain in a position to handle bulk of this growing market. Big outlets are molding powders for resin producers where it is fabricated into dozens of end products such as telephones, electrical switch material, pot handles, etc. There is also a rapidly expanding market in the plywoods industry for use in glues. Another sizeable outlet is in manufacture of grinding wheels. Price was recently raised 1-1½c a lb.

The acetone market has improved considerably in recent months. Some is now going to export outlets. Recent firming in prices in U. S. has given Canadian producers a little more marketing flexibility.

B.A-Shawinigan is now going into first Canadian production of nonyl phenol—probably most important of the alkyl phenols.

Ethyl Corp. of Canada

Company's new $12-$15-million Sarnia plant for first Canadian manufacture of antiknock compounds is nearing completion. A September completion date is now anticipated. Three basic raw materials are lead, sodium and ethyl chloride. For the time being the last two will be supplied from U. S. sources, the lead coming from Canada's biggest producer Consolidated Mining & Smelting Co. Ethyl Corp. takes delivery of lead in 1,800 lb. pigs which in turn are melted before starting into the various processing steps.

There is no doubt that someone will erect a chemical plant in Sarnia in the very near future to manufacture ethyl chloride with Ethyl Corp. the chief customer. Dow Chemical of Canada, for instance, will have plentiful supply of the two basic raw materials — ethylene and chlorine.

Erection of a sodium plant in the Sarnia area to supply Ethyl Corp. is not seen as likely a development for several years yet.

Dow Chemical of Canada

Since construction of its first chemical plant in Sarnia's Chemical Valley in 1947 this fast-stepping company has more than kept abreast of the accelerated growth of Canada's chemical industry. In all that time construction crews have never left the property. Before one plant project had been completed one or more new ones were in the advanced engineering stages. When the latest program is completed capital investment in plant and equipment will be well over the $60 million mark.

Dow's progress has been along the ethylene - chlorine - benzene highway. The chemical interplay of these three basic materials has provided the company with a broadly diversified product list. The latest program is in two directions: Boosted ethylene and chlorine capacity—with new long-term purchase contracts for additional benzene — provides Dow with the additional storehouse of chemicals to launch a further diversification program into still more product fields.

Here's the latest news from Dow:

Expansion in existing facilities: The first stage in a big expansion in ethylene capacity will be completed by year-end. The second stage of this program is now being engineered. Hope to have this completed by late 1957. Much of the essential equipment is already on order. Lengthened deliveries are expected to prolong completion date beyond what had originally been planned. Will boost over-all ethylene capacity by 100%.

An expansion in chlorine capacity, approved a year ago, will be completed by early fall. An additional expansion by early 1957. This will boost over-all chlorine capacity by 30%, make Dow biggest chlorine producer in Canada.

Additional equipment has been authorized for a further expansion in ammonia output. This will boost over-all capacity some 30%.

Along with these new chemical units goes a broad program of expanded services; more water, steam, additional salt wells, etc.

New Projects:

Engineering is now complete for an **ethanolamine plant** and Catalytic Construction Corp. is already clearing the site for early construction start. Scheduled for completion for year-end. Ethanolamine—based mainly on ethylene—is used extensively in purification of natural gas and for use in manufacture of detergents. With the huge gas pipeline programs lined up in Canada over the next few years demand for this product will be heavy.

A new plant for first Canadian output of **pentachlorophenol** is expected to be in operation early next year. Big volume usage is as a wood preservative.

Contract for construction of a **Styrofoam plant** will be let shortly. This will provide a big new outlet for company's expanded polystyrene plant. This lightweight, foamy-looking material can be put to many uses—room refrigeration, for plasterbase in construction, perimeter insulation, display work.

Fluorinated hydrocarbons may be another new product for Dow. Preliminary engineering has already been completed. No completion date scheduled as yet but money was appropriated this spring. These Freon products used in many ways, aerosols, insecticides, etc.

Plan to enter the polyethylene field. Several key men have been at parent's Midland plant operations. Decision has yet to be made whether this will be the standard high-pressure process which turns out the flexible plastic material, or the newer Ziegler (low-pressure) operation which turns out an entirely different product, more rigid. At the moment thinking seems to favor the low-pressure process. Expect to have this plant in operation by late 1957.

Is stepping up capacity of **ethylene glycol** plant. This should be completed by early next year. This market has been expanding rapidly in Canada in line with steadily increasing number of automobiles on the road. Chief market outlet is antifreeze. Canadian market currently around 70-80 million lb. a year level. Will be up to 100 million lb. in early 1960s. Dow claims to have sufficient capacity with new expansion to handle most of the domestic requirements. Current program will boost plant capacity by 30%.

Commenced expansion in **polystyrene** capacity in March. Will be completed by October of this year. This will give greater flexibility for manufacturing colors and special formulations as well as providing additional capacity.

An additional reactor is being installed in company's **latex** plant. This will provide for a 50% increase in latex capacity.

Canadian Chemicals Co.

Company is currently operating at a high rate of capacity with a large portion of output going to world export markets. In the first quarter this year company operated profitably for the first time. At the moment petrochemicals section of business is the more important. This plant is operating at some 110% of designed capacity. Although the cellulose acetate plant is said operating at an even higher level—140% of designed capacity—company's yarn and staple fibre plant is still working far below capacity reflecting still depressed textile markets.

Pentaerythritol continues the company's chief petrochemical product, currently going mainly to export markets to supply all of Cellulose Corp. of America's world markets. At the moment the $75-$80 million sprawling Edmonton plant is able to compete favorably even with German producers in European markets. A large part of output is still going into the big U. S. market.

Plant capacity of this, one of the lowest-cost producers in the world, has been boosted to around the 17-18-million-lb.-a-year level. This higher-priced chemical is better able to absorb long rail haul costs to market. The cheaper raw material sources and economies of large-scale integrated operations, enable company to absorb 2½c a lb. rail haul to Eastern Canada and lay down competitively there.

Strong plywood demand, particularly on the West Coast, has kept formaldehyde requirements for use in glues at record levels. Currently formaldehyde consumption in this country in plywood glues is running around the 25-million-lb.-a-year mark. Forecast is that this will rise to 38-39-million-lb. level by 1960.

Market for company's range of solvents generally is holding at a high level. The big problem continues to be the high transportation cost hurdle to larger market areas. Active research is under way on projects to upgrade these lower-price materials, where possible, to higher-price products that can more readily absorb transportation costs to market.

Research people are also looking more closely into possibility of still closer integration between woodpulp and chemical operations. What available chemical raw materials might be recovered from pulp and paper waste products? What chemicals that can be made at Edmonton could be beneficial in woods operations?

Construction of warehousing and semiprocessing facilities at St. Jean, Que., will enable the company to serve potential markets in Eastern Canada more efficiently. New plant will provide twisting and beaming operation for company's yarns and staple fibre as well as general distribution facilities in the Quebec area. Plans call for a 120,000-sq.-ft. building.

Polymer Corp.

Although the prolonged sinking spell in crude rubber has dropped prices 35% since early this year — and increased marketing activity of big U. S. synthetic rubber producers means tougher going for Polymer in the days ahead—top officials are not too concerned over the marketing outlook.

Traditionally there is no great market swing away from synthetic to the crude variety until crude prices have remained around current depressed levels for several months. Many rubber experts can't see how crude can be held at these low levels for that long.

Polymer officials are fully prepared for stepped-up competition in its world markets from U. S. producers. But are confident the following factors will help them maintain the major share of their expanding overseas outlets:

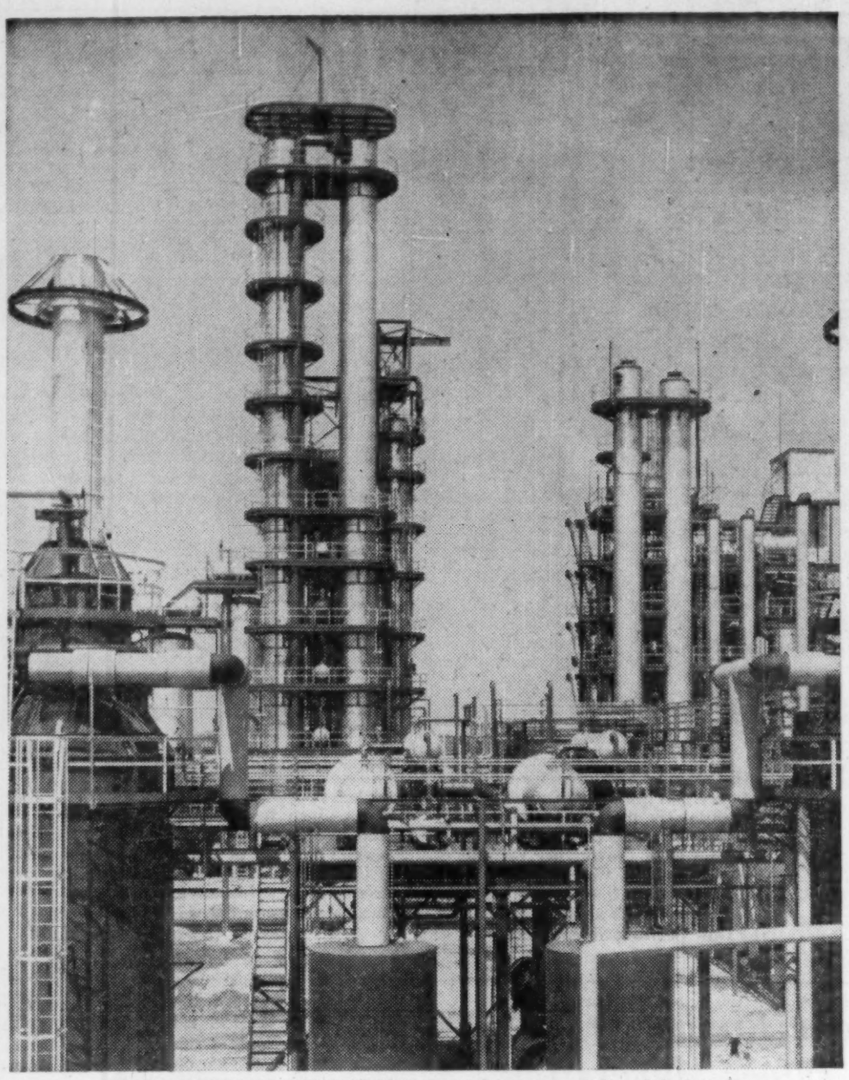
1. Polymer has been selling in European markets for 10 years now; U. S. producers are just now getting into the export picture.

2. Synthetic rubber has maintained a remarkably stable price structure in face of wildly fluctuating crude rubber prices in last few years.

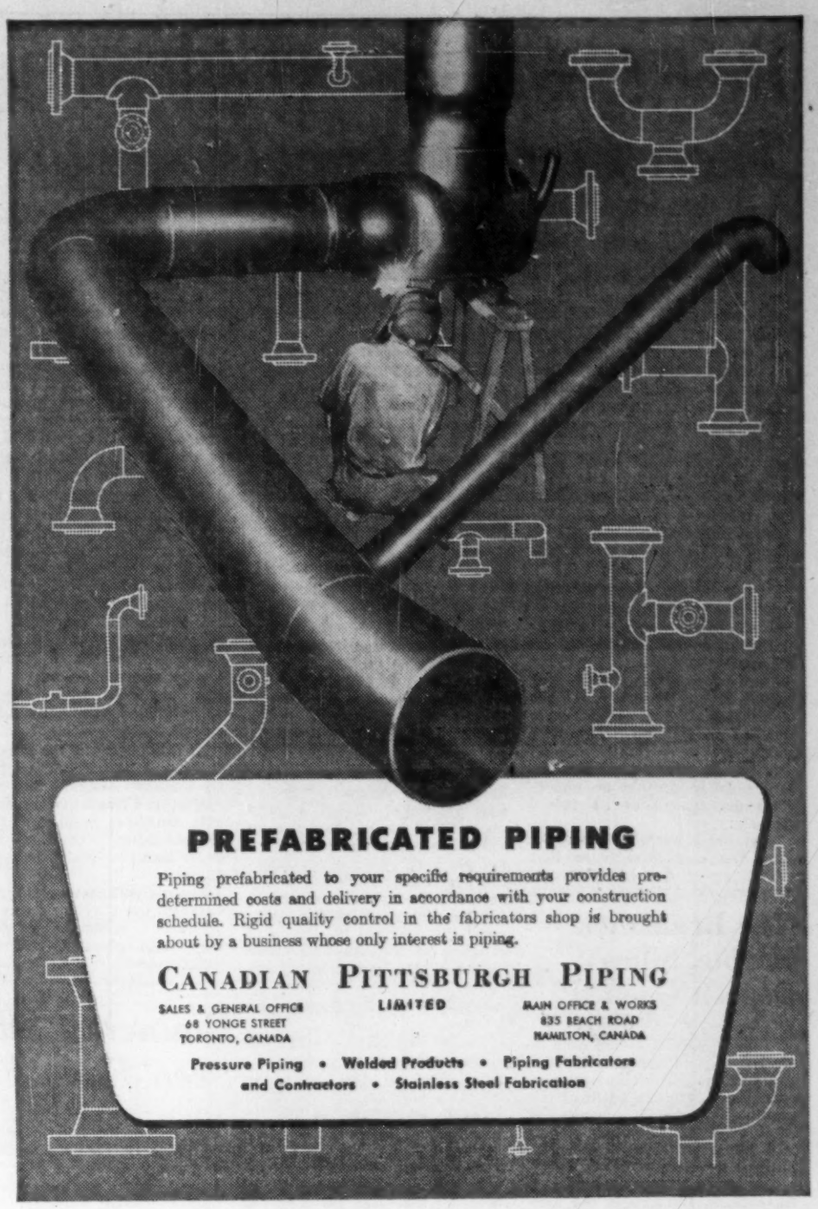
3. Polymer is still the low-cost supplier to overseas markets. Its GR-S type lays down in export markets 2c a lb. lower than U. S. product.

4. While U. S. producers are

(Continued on page 52)



HERE'S A TYPICAL DRAMATIC industrial pattern of Canada's fast-growing petrochemical industry. About 50% of Canada's current $200-million chemical plant expansion program is in the petrochemical field. The dozens of "intermediates" from these plants will end up in hundreds of consumer and industrial products ranging from antifreeze to synthetic fibres. This is the styrene monomer plant of Dow Chemical of Canada at Sarnia. The product from this unit ends up in polystyrene-type plastics and latexes for paints.



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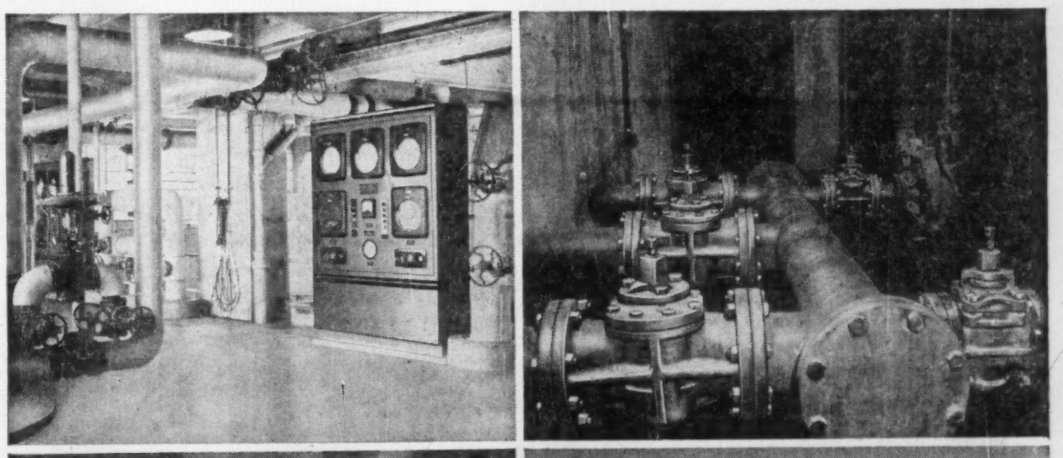
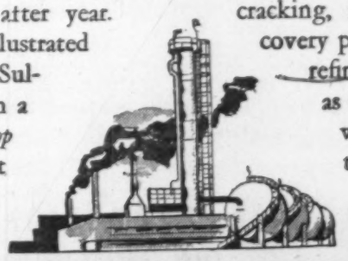


CHEMICAL PROCESSING AND PEACOCK

Precise measurement...accurate control...dependable filtration...three vital factors in successful chemical processing. Throughout the industry, in large plants and small, engineers have come to know they can depend on the quality of Peacock equipment year after year. Typical installations are illustrated above: *Top left:* Foxboro Sulphate Digester Controls in a large western pulp mill; *Top right*: Nordstrom Ni-Resist Lubricated Plug Valves on black liquor storage tanks and lines in evaporator room; *lower left:* Cuno Flo-Klean Filter handling mill water supply in an eastern paper mill; *lower right;* Foxboro Model 50 Consotrol instruments on a fluid catalytic cracking, fractionation and gas recovery panel in a British Columbia refinery. In chemical processing as in so many industries, men who demand the best look to Peacock.



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How Companies Are Planning Their Petrochemical Growth

(Continued from page 51)

all expanding output by costly plant expenditure programs, Polymer has been able to steadily expand output from substantially the same general plant layout. Besides, Polymer can continue expanding output for several more years by removal of certain process bottlenecks. Since the last major plant expansion program in 1950-51 output has been boosted 41% — or from a total of 73,000 long tons to 103,000 tons in 1955. This year a new peak will be attained, estimated around 112,000-115,000 tons (combined GR-S, Butyl and specialty type rubbers).

Polymer officials realize that with rapidly growing world requirements for synthetic rubber large-scale expenditures on expanded plant are inevitable before very long. Just last month a purchase option was taken on another 100 acres of nearby property in Sarnia. For instance Polymer has already outrun its butadiene capacity and must soon make an important decision about its future supply.

Because of her own know-how and the cost advantages that come from integrated plant operations Polymer officials have pretty well decided to build and operate its own butadiene plant. But no final decision has been made as yet on plant location, officials claim.

It is pretty clear that the raw material source, in the quantities Polymer must arrange for, must be butane, either from natural gas in Alberta, transported through the Interprovincial oil pipeline to Sarnia, or from refinery gas streams from nearby Sarnia oil refineries. Against the much lower cost of butane in Alberta must be balanced the long, costly rail haul of the made-up butadiene to Sarnia.

Union Carbide, Canada

Early in 1957 the multimillion-dollar petrochemical plant of Union Carbide Canada at Montreal East will be fully integrated and in complete operation producing synthetic organic chemicals (based on ethylene oxide) and polyethylene resin.

So buoyant has been the market for these products over the past year that Carbide's engineers have revised upward on some five occasions their original plans for production capacity. The result is that capacity of the polyethylene resin plant has been increased by some 40% over the original design, and capacity of the ethylene oxide unit has also been boosted because of the substantially increased demand for glycol of all types.

These expansions over the original plans now make Carbide's Montreal plant project the largest current construction program in progress in the petrochemical industry in this country.

Since early last year Union Carbide has been processing ethylene glycol at its Montreal East plant from imported ethylene oxide. The oxides derivatives unit is expected to be in operation late this year producing chemicals such as the ethanolamines, glycol ethers and polyethylene glycols.

In this fully integrated plant, production of polyethylene and ethylene oxide are related operations with Union Carbide taking advantage of the economies inherent in the linking of these two processes.

The company will make ethylene oxide by the direct oxidation of ethylene, with subsequent conversion of the oxide to ethylene glycol and to various derivatives of ethylene oxide. The raw material will be ethylene extracted from byproduct gases of the neighboring refineries of Imperial Oil and McColl-Frontenac Oil Co. plus cracked liquid petroleum fractions.

Some of the ethylene will then go to the direct oxidation unit to be oxidized over a silver catalyst with air to make ethylene oxide. A major part of this ethylene oxide will be converted to ethylene glycol for anti-freeze and industrial uses by reacting with water; diethylene glycol and triethylene glycol are also manufactured. Further reaction with ethylene oxide yields higher polyethylene glycols.

At this plant too, the ethylene oxide will be the starting point for many other important chemicals. For example, reaction with ammonia yields the three ethanolamines; reaction with ethyl alcohol yields the glycol ethers.

The polyethylene resin plant will also use ethylene as its raw material — using the gas under very high pressure and temperatures.

New Brunswick Marble, Silica Deposit Opened

From Our Own Correspondent

FREDERICTON — Opening up of recently discovered marble and silica deposits near Temperance Vale, 60 miles north of this provincial capital, has ushered in what may prove another important phase in New Brunswick's mineral development.

The owners York Marble & Aggregates, Ltd., claim the marble is comparable to the best Italian grades, and silica the equal of any in North America.

The company has spent upwards of $100,000 in development, erection of a hammer mill and installing machinery, and its cutting plant is being readied for the installation of marble saws for production of structural and decorative stone.

SILICONES COME from a remarkable family of chemicals with a long list of excellent qualities. One of their characteristics that's opening big market potentials is their water-repellency. This has given it outlets in textiles, masonry coatings, etc. Above is one of the latest applications — use of silicone to make leather durably water-repellant while at the same time permitting it to "breathe." The shoe with conventional leather is cracked and dried out after wetting whereas the shoe with the silicone leather treatment is still soft and flexible. The product used here is Sylflex, supplied by Dow Corning Silicone Ltd.

Bouncing Silicone Rubber Seen Boon For Paper Makers

An entirely new kind of silicone rubber has been developed by Union Carbide that promises to largely eliminate a troublesome problem in the Canadian pulp and paper industry.

The value of the new silicone rubber development is that it can be cured (or vulcanized) in thick sections for the first time. Now the superior qualities of silicones can be taken advantage of in making large covered rolls for use on paper machines.

These rolls are of particular significance to the paper industry because they largely eliminate "pick-up" and hence downtime on paper machines. The resultant savings in production costs to the paper industry are substantial.

Union Carbide officials see a potential $10-$20 million business largely to the pulp and paper industry. But the new silicone roller applications will also mean savings to plastics and printing industries as well.

Using the Union Carbide product, American Wringer Co., Farnham, Que., has made a silicone rubber covered roll that is the largest one ever made in North America.

This large roll, 24 in. in diameter by 14 ft. in length, is now in operation as a top press roll at a Canadian paper mill.

Use of this commercial scale roll at the paper mill was the direct result of successful experimental runs on the paper machine at the School of Paper Making at Three Rivers, Que.

The customary sticking of the pulp to the roll was entirely eliminated with use of the silicone rubber roll. Newsprint production would benefit even more by use of a silicone rubber roll.

Until the new rubber development, silicone rubbers had been limited in their uses because they could only be cured in this section. These silicone rolls too can prove valuable as eliminators of static electricity, Union Carbide officials claim.

This is just one of the new applications of this amazing new chemical family — the silicones. They are now being applied successfully in 19 basic industries. Applications include masonry water repellents, insulation for electric motors and transformers, release agents for foundry, rubber and plastic molds, waterproofing of asbestos shingles, textile waterproofing.

Market studies indicate a very rapid growth for this chemical family. Sales in both Canada and U.S. are now running around $50 million annually and are expected to double by 1960.

How Chemical Twins Will Meet Demands

Chlorine and caustic soda — the chemical twins — are growing rapidly in stature in this country as the industrial tempo speeds up market requirements.

There is a big new wave of plant capacity either just coming in, in construction, or planned for the near future. It will make Canada self-sufficient in these two basic chemicals and assure some surplus capacity for a brief period at least. Here are the new projects:

—**Canadian Industries Ltd.** has boosted its Cornwall plant's capacity by two and one-half times.

—**Hooker Electrochemical Co.'s** big $11-million Vancouver plant for first B. C. production of the two chemicals is now under construction. Completion scheduled for early 1957.

—**Shawinigan Chemical** has recently announced plans to construct a caustic and chlorine plant at Shawinigan Falls, Que.

—**Standard Chemical Co's** modernization and expansion program at its Beauharnois, Que. plant is just about complete. This will boost capacity a further 25%.

But this not all.

Right now consideration is being given to construction of two more caustic and chlorine plants — one in New Brunswick and one in Saskatchewan. There could be a third in the Fort William area.

All three "possible" would grow out of new pulp and paper plants being planned. The New Brunswick one would supply the new Lepreau pulp and paper plant recently announced by London, Eng., and Chicago interests. It is known that Canadian Industries Ltd. is looking actively into this situation. The Saskatchewan plant would grow out of the recent announcement by Western businessman Robert Campbell that his "group" would build Saskatchewan's first pulp and paper plant near Prince Albert. Mr. Campbell intimated that new caustic soda and chlorine production facilities would likely be constructed to serve the new plant.

The Duvernay, Alta. plant of **Western Chemicals** has been steadily boosting capacity since its completion. My mid-1957 another expansion move will boost capacity to 40-tons-a-day level. With an eye to the future provision is being made to boost capacity still further, with relatively little additional expenditure, to around the 60-tons-a-day level.

Keeping Balance

The chemical twins are produced together, coming from the electrolytic decomposition of common salt. There is always a little more caustic produced than chlorine. One of the big headaches of the producers has been keeping these two in market balance.

Chlorine goes mainly into woodpulp for bleaching in this country. Its other big markets are in textiles, chemical synthesis and water purification. Consumption rate has grown from 1,500 tons in 1915 to 200,000 tons in 1954.

Caustic soda is more in demand for rayon production, pulp bleaching, soap making, metal processing, use in chemicals, etc. Consumption has grown from 6,500 tons in 1915 to 260,000 in 1954.

Chlorine has had an average rate of growth of about 12% per year for the past 25 years. In the same period caustic demand has grown at an average of about 7% per year.

Aid Wonder Metals

One of the most exciting prospects in chlorine's market potential is in processing the wonder metals titanium, zirconium and columbium. If projected demands for titanium, for instance, are realistic and present processes used, the chlorine demand here could be tremendous. It is believed also that chlorine has been used extensively in recent metallurgical experimentation with separating and refining columbium ores.

It is practically certain that the huge indicated orebodies — one in the Oka region of Quebec, the other in the North Bay,

(Continued on page 53)

ERCO chemicals ... story of expansion for service

Growing since 1897 and still expanding today

Since its organization, ERCO has advanced with a long-term expansion programme to serve the chemical needs of Canadian agriculture and industry. Capacity of the original ERCO plant is being vastly increased . . . a large phosphorus plant built at Varennes, Quebec . . . a new sodium chlorate plant begun in Vancouver . . . a new phosphate plant in Hamilton.

Paralleling the expansion of production facilities has been a vigorous programme of product development to meet the challenging new needs of industry . . . expansion of ERCO technical services and broadening of shipping facilities to meet every demand.

Today, *wherever* chemical compounds are required, ERCO is equipped to make quick deliveries and staffed to provide expert on-the-job technical service on the use of these products. And as Canada continues its impressive rate of growth, ERCO's expansion programme will continue to keep pace with it!

The industries we serve: AGRICULTURE, BAKING, BEVERAGE, CERAMIC, COSMETIC, DAIRY, DETERGENT, LEATHER, METALLURGICAL, PAINT AND VARNISH, PETROLEUM, PHARMACEUTICAL, PULP AND PAPER' SUGAR REFINING, TEXTILES.

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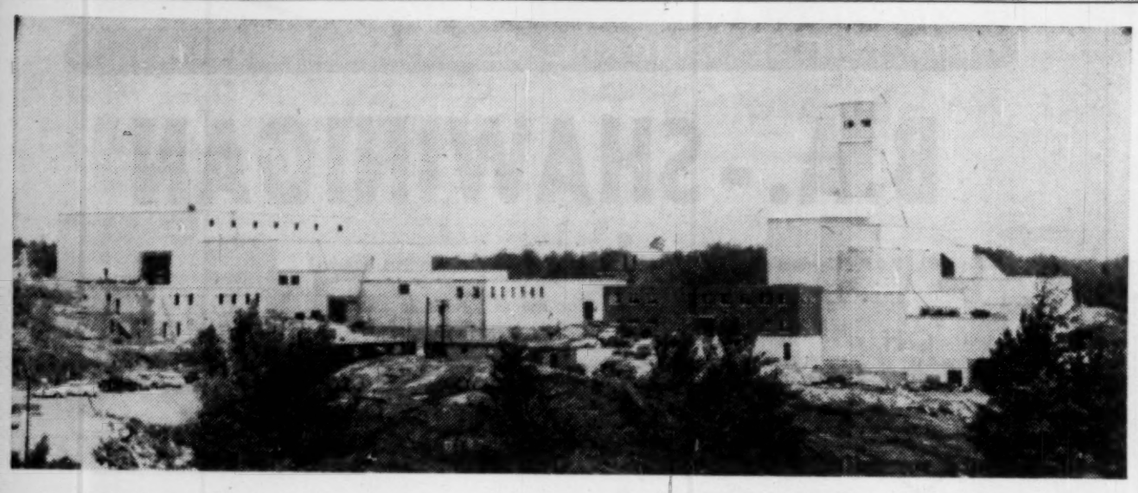
NORTH VANCOUVER
Site of ERCO's new $5,000,000 sodium chlorate plant. Scheduled to begin operation late in 1956 or early in 1957, it will enable ERCO to provide even better service for the ever-growing pulp and paper industry in British Columbia.

HAMILTON
Work has begun on a new combination of ERCO plants to supply the phosphoric acid requirements of industry and agriculture in this area. Phosphorus will be processed by the most modern methods in producing chemical compounds for use in many industries. Sulphuric acid and "wet process" phosphoric acid plants will be installed in parallel.

BUCKINGHAM
Greatly expanded since its modest beginning in 1898, this ERCO plant on the Lievre River in Quebec now occupies 57 acres and employs more than 500 people. Its principal products include red and yellow phosphorus, phosphoric acid, sodium and calcium phosphates, sodium and potassium chlorate, phosphorus sesquisulphide, ferrophosphorus, and several trade name products.

VARENNES
Located on the South shore of the St. Lawrence River near Montreal, this plant can make use of economical ocean transportation for exporting ERCO products to world markets. The 122-acre site provides ample space for expansion and new production facilities will be installed as demand continues to grow.

PLANTS
SALES OFFICES



URANIUM IS A mineral which demonstrates how mining can suddenly call for tremendous quantities of chemical reagents. The Blind River area, which likely will become the world's greatest uranium camp, is an example. Mines in the district, like the Pronto Mine above, use sulphuric acid in leaching operations for the recovery of uranium precipitate. Pronto, a big sulphuric acid user, handles more than 1,200 tons of uranium ore daily.

How Chemistry Makes Mines

Test-Tube Processes Aid in Recovery of Rare Ores

Just as the packing companies are supposed to use every part of the pig except the squeal, so mining companies are utilizing chemistry to win mineral wealth from reluctant ores and to maximize the range of valuable mineral recoveries.

It's a job that's going on in many places including research laboratories of the Department of Mines & Technical Surveys at Ottawa, provincial mine laboratories, Inco and Cominco research facilities, universities, organizations like the nonprofit Battelle Memorial Institute in the U.S. which has done much work for Canadian companies.

What might be termed the era of new minerals has brought a much closer partnership of metallurgy and chemistry. New metals and nonmetallic minerals have required new processes, many of them chemical.

To a probably unrealized degree the mining industry is about to become an unparalleled consumer of chemicals. The demand for chemicals in some directions may be so great that quite a challenge will be presented to the chemical industry to fill it. In a sense, however, mining will pull itself up by its own boot straps. As the mining industry gets more deeply into chemistry ability to produce chemical byproducts can be expected to increase greatly as well.

Uranium is a new mineral which demonstrates in graphic fashion how mining can suddenly call for tremendous quantities of chemical reagents. The Blind River area provides a prime example.

All the operators in Blind River will use sulphuric acid in their leaching operations for recovery of a uranium precipitate. One chemical company arranged to take care of the 1,250-ton Pronto operation.

Noranda Mines built a 500-ton-a-day capacity plant to supply Algom Uranium and Consolidated Denison with their combined mill capacities of 11,700 tons daily.

But since Noranda made its decision to put in its plant (which also will turn out an iron byproduct), production plans for the Blind River camp have taken a turn which suggests far larger facilities than anything yet prepared for on the acid supply front.

Lake Nordic, Spanish American and Panel are expected to have a combined mill capacity of 9,000 tons a day. Can-Met has already arranged for a 2,500-ton mill. Stanleigh Uranium, Milliken Lake and Stancan are expected to have 3,000-ton mills each. This means over 20,000 tons of expected additional capacity for which acid provision will have to be made. Total acid consumption is expected to run 1,500 tons per day.

Sulphuric acid is not the only chemical reagent used in what is expected to become the world's greatest uranium camp. Numerous other products are used including ion exchange resins, sodium chlorate, nitric acid, magnesium oxide, lime, sodium hydroxide flocculating agents such as "Separan." Some operators will use salt and even glue.

Of course, not all items will run into big dollar values. There will be an initial outlay of perhaps $2 million for ion exchange resins at Blind River but after that replacement may only be required over a two-year period.

Nitric acid consumption may run 20 to 30 tons a day.

Consumption of lime may run to 600 tons a day and will be quite an item. One Blind River operator, Consolidated Denison, encountered a bed of limestone in its shaft and is hopeful that this may take care of its own lime needs and possibly those of others as well.

Creation of new producing capacity in the Beaverlodge camp has not been as dramatic as at Blind River, but it would seem likely that reagent consumption will double over the next 18 months or so.

Eldorado Mining & Refining is expanding its capacity from 700 to 2,000 tons daily. Gunnar Mines hopes to lift its mill from 1,400- to 1,650-ton capacity by early next year. Actual capacity will probably prove closer to the 2,000-ton bracket, it is believed.

Lorado Uranium has received a custom contract from Eldorado and has undertaken construction of a 500-ton mill, which will undoubtedly be a large consumer of chemical reagents.

When a number of big mills, including Bicroft and Faraday, swing into operation in the Bancroft camp of eastern Ontario, still another big market will open to the chemical industry.

For the moment, the uranium section appears to dwarf all other parts of the mining industry when it comes to prospective consumption of chemicals. But there are important developments in other directions.

International Nickel has placed in operation the first unit of its ammonia leach process for recovery of a nickel chemical product and high-grade iron ore in pellet form. Current iron ore output is understood to be about 250,000 tons per annum. Eventual ammonia consumption will likely be quadrupled as iron ore production is to be stepped up to a million tons a year or better.

Falconbridge Nickel is operating a large-scale leach plant at Sudbury and future plans may involve expansion of such facilities.

Sherritt Gordon's ammonia leach plant for nickel recovery at Fort Saskatchewan can be termed an outstanding success. With some further changes made recently, the plant is expected to handle considerably over its rated capacity. Recovery of copper by leaching is under consideration.

Leaching is bound to become more important in Canadian metallurgy and will involve large chemical consumption. The Eastern Mining & Smelting project at Chicoutimi is to use the Sherritt Gordon leach process for recovery of nickel and may treat the production of numerous mines now slated for production.

Base for Fertilizers

Brunswick Mining & Smelting has not yet finalized its metallurgy and has not announced its definite plans for plants. But the company's ore has a high pyrite content and sulphuric acid could be manufactured as the basis for turning out large quantities of fertilizers.

Mineral Exploration Corp. has revealed plans for a custom zinc smelter to be built at Sydney, N.S., with a capacity of 150 tons a day. This would mean a large production of sulphur gas which could not be permitted to go up the stack. Involved therefore would be either production of SO_2, or sulphuric acid. That's what the management says.

The expanding range of minerals now coming to the fore means a great new field for chemistry. Strategic Materials Corp. plans to place a $20-million new manganese and iron recovery plant in operation at Woodstock, N.B.

Lithium, a new item on the Canadian production list, not only requires chemical for its recovery but is becoming an increasingly important item itself in the chemicals field.

One of our richest new resources is columbium — a "high temperature metal" — found in the Oka area of Quebec, the North Bay area, Ontario, the Nemegos area west of Sudbury, and in southern British Columbia. Resources already demonstrated in the Oka area could make Canada a leader in this metal.

Metallurgy of metal recovery and development of columbium alloys presents practically an entire new future industry in which chemistry can be expected to play a large part. Columbium is not easy to extract. At some locations large quantities of chlorine may be needed to effect the necessary recovery.

Chlorine, of course, is a chemical which is likely to come into greater and greater use where problem minerals are concerned.

A whole battery of new minerals called the "rare earths" —actually they are not earths at all—may open a surprising new field for chemistry. Hundreds of thousands of dollars are at present being spent by the U.S. Bureau of Mines on researching these little-known elements which possess such a wide variety of potential uses.

Substantial quantities of rare earths are known to be present at uranium properties in eastern Ontario's Bancroft property. They are also known to be present at Oka, the Beaucage property at North Bay and the Multi-Minerals property at North Bay as well as at many other locations.

So far, rare earths are regarded largely as curiosities but civilization's crying need for new and better materials will probably bring them into prominence in our time. Their recovery may be largely chemical.

Plans of Frobisher for development in the northwest include leaching for metal recovery as well as more traditional recovery procedures. It looks as if chemistry has solved the recovery of nickel from nickel silicates and the time may come when large tonnages of these ores are drawn from the tropics for treatment in Canada.

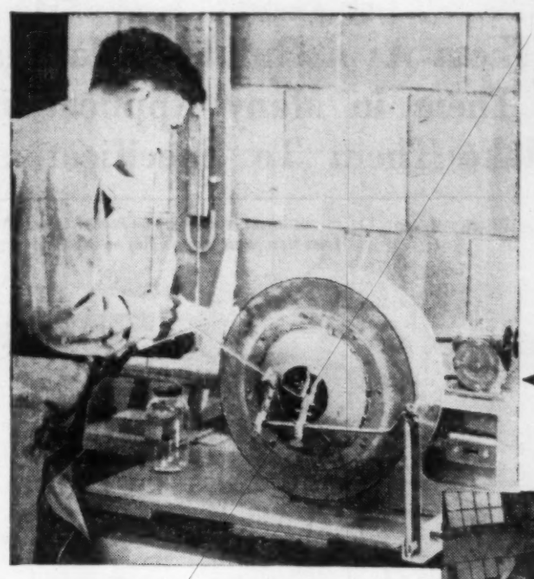
Our biggest metallurgical giants — International Nickel and Consolidated Smelters—are both relying heavily on research (and chemistry) to maintain and improve their positions in the future. There appears to be no doubt about mining's trend to chemistry. Let us hope there will be sufficient scientists versed in chemistry that Canadian mining may get the greatest value out of the trend.

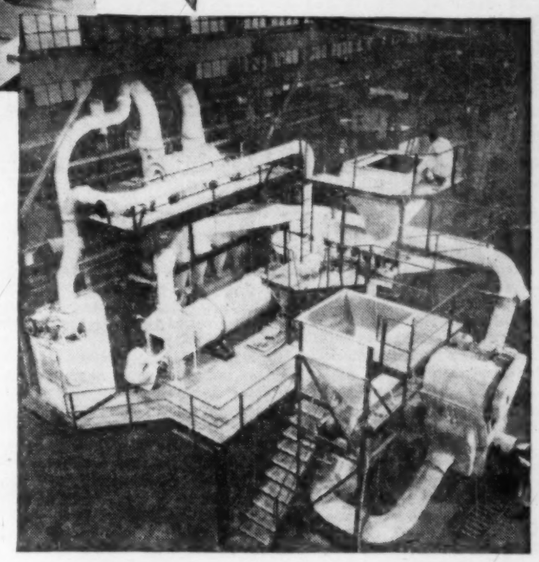
Chemical Twins

(Continued from page 52)

Ont. area — will be developed some day. If chlorine is to be a major processing chemical the tonnages in this new application could be huge.

The two chemicals are produced in one or the other of two major types of cell: diaphragm, or mercury. The caustic soda made from mercury cells is of higher quality. Mercury cells are often preferred where power is cheap, fuel is high-priced and/or where only premium-grade caustic is required.





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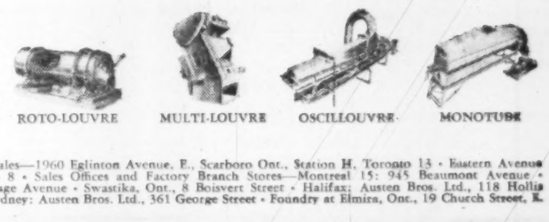

ROTO-LOUVRE MULTI-LOUVRE OSCILLOUVRE MONOTUBE

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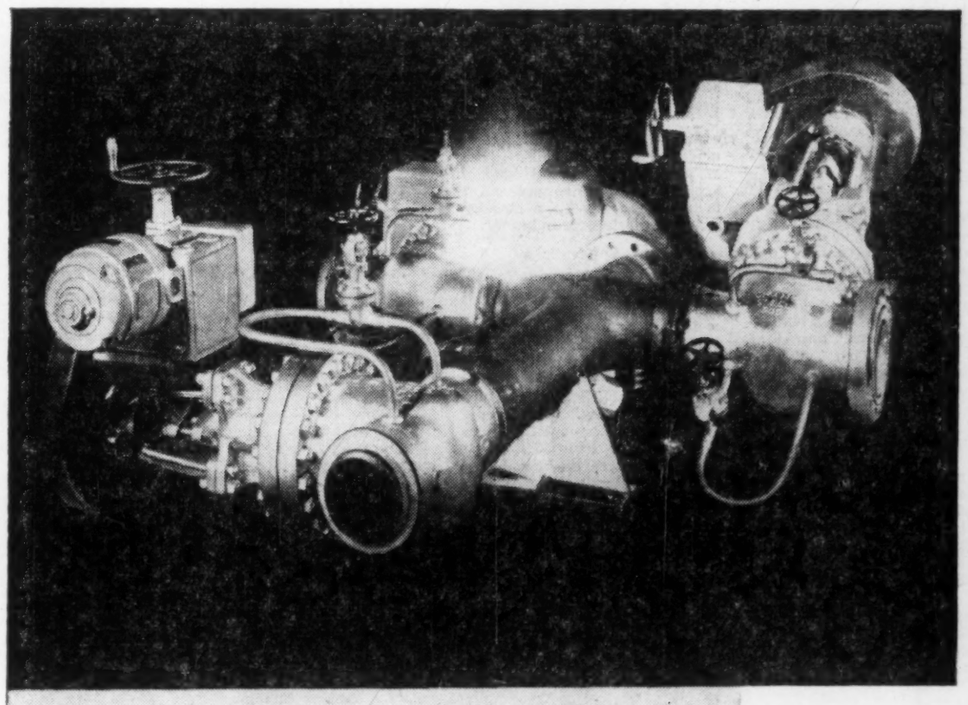

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Plastics Move Into New Jobs

• Engineers Accept Them As a Building Material
• Manufacturers Use Them in Many Applications
• Chemists Tailor-Make Them To Specifications

There's a solid note of optimism in the Canadian plastics industry contrasting sharply with the vaunting enthusiasm of a few years back.

Everyone in the industry, from resin producers to molders, have come through a market baptism of fire in the interval. The optimism today is of a more mature and impressive variety.

Ask plastics officials to list their reasons for optimism and they'll probably give the following—not always in this order, though:

—Plastic materials are at last being looked on by construction engineers as full-fledged construction materials, like wood, glass, metals, etc.

—Manufacturers in a broad crosscut of industry are showing much greater readiness to experiment with, and use, plastics.

—Chemists have shown remarkable ingenuity in improving resin materials; in turning out tailor-made plastics for a wide variety of end uses.

—Finally — a strong faith that Canada is on the march, that the industrial expansion of the last several years will continue and with it the market for plastics.

Illustrative of the last point: During the last 12 months there have been several examples of sizeable Canadian firms for the first time tooling up to make their own plastic articles. Up to now they had been importing them either from large independent molders in U. S., who could amortize mold costs over many times the output of the Canadian firms, or from associated manufacturing companies.

In other words, the Canadian market is fast assuming the potential to justify the heavy tooling costs for plastics parts manufacturers. More rigid investigation by Ottawa tariff authorities of "value for duty" regulations of some of the exporting U. S. firms have been a factor too.

Growth Potential

Plastics people will say the market growth potential in this country is even greater than in U. S. and will back this up very convincingly by quoting comparative per capita plastics consumption in the two countries. For instance, to keep pace with current U. S. market use of polystyrene plastics, Canada should be consuming 25-30 million lbs. a year. Instead, the figure is 12 million lbs. Although not so marked the discrepancy shows up in the other plastics as well.

One thing is certain. The big Canadian chemical producers of the all-important resins think Canada is going to do a lot of 'catching up' over the next few years. They are endeavoring to keep abreast of the indicated fast-growing market demand.

Canadian Resins & Chemicals is going ahead with expansion of its vinyl chloride plant at Shawinigan Falls, Que.

Dow Chemical of Canada is expanding all along the line; is boosting basic ethylene and chlorine capacity, expanding and modifying polystyrene facilities. But most important, Dow Chemical has virtually decided to jump into polyethylene manufacturing field with a new plant planned for late 1957 operation.

One of the most promising new materials to come out of the chemist's test-tube—polyurethane foams—is now being produced for the first time in Canada by **Robinson Collo Canada** at its Woodbridge, Ont., plant.

B. F. Goodrich Canada is constructing a $3.5 million plant near Welland, Ont. for manufacturing geon polyvinyl materials. Plant is expected to be in production by early 1957.

Naugatuck Chemicals Division of Dominion Rubber Co. has under way a substantial expansion at its Elmira, Ont. plant to manufacture polyester resins and formulate compounds.

Du Pont Co. of Canada is planning to produce nylon molding powder for the first time in Canada this year at its Kingston, Ont. plant.

Reichhold Chemicals will enter the polyester resin field this summer becoming the second major producer in this country.

Early in 1957 **Union Carbide Canada's** multi-million dollar petrochemical plant at Montreal East for production of synthetic organic chemicals (based on ethylene oxide) and polyethylene resins, will come into operation. In line with fast expanding market for polyethylene, design engineers have expanded original plant capacity plans by an additional 40%. At Belleville plant phenolics resin capacity is being expanded 60%.

At the same time, dozens of plastics fabricators across the country have expanded, or are planning to enlarge their facilities.

This huge expansion and streamlining program in resins producing facilities assures Canadian industry a plentiful supply of the big volume, fast-moving plastic materials. At the same time the resin producers are installing adequate plant flexibility to provide a broader range of plastics formulations.

New Applications

All the major producers report promising new market applications opening up for their materials and expanding consumption in their long-established bread-and-butter lines. Actually 1955 was by far the best year for all segments of the plastics industry. Production, reflecting the buoyant Canadian economy, rose some 25%.

What's more, the trend has continued into the current year with every major producer of plastic resins reporting further sales gains and new record output in 1956 to date.

The gain, particularly in polyethylene, has been remarkable. Sales for two of the major suppliers are running some 40%-50% ahead of same period last year.

One of the brightest trends in the plastics marketing picture is the fast-expanding application of plastics in auto production. From bumper to bumper more and more plastics are being used every year by auto-makers. From the polyurethane foam sun visors and instrument boards, phenolics water-pump parts, various nylon gears, etc., the average car today is using some eight pounds of plastics.

Both the proportion of plastics used and the number of cars on the road are steadily climbing every year. Plastics people see this as one of the biggest outlets in years to come.

Use In Housing

Another large volume market offering plastics a wide variety of applications is in the house construction industry. In the past few years plastics applications have increased rapidly in new home construction.

Here they are commonly used for wall coverings, floor tiles, counter tops, screening, plastic panels for interior partitions and skylights. More recently they are being examined for use in wall construction (foamed plastic sandwich walls, load-bearing panels, and plastic-masonry walls).

For the future, plastic products are destined to be used for making prefabricated roofs and floors, and for structural members.

For extruders the plastic pipe market has been a rapidly expanding field with polyethylene still accounting for the lion's share of the market. But butyrate, and rigid polyvinyl chloride pipe are also being made in this country now and competing for a share of the over-all market.

Last year 30%—or 4.7 million pounds of polyethylene resins—were used in pipe manufacture in this country.

Pipe Market

Pipe market could be sharply boosted over the next few years by new processing techniques in manufacture of polyethylene resin. If this material can be given improved high temperature characteristics, its use in industrial piping, for instance, could become very great. Developers of the revolutionary low-pressure manufacturing process claim their product has this characteristic. One major U. S. company, which has experimented extensively with irradiated polyethylene (subjected to atomic bombardment), claims its product can stand indefinite exposure at 150 degrees centigrade and has three times the tensile strength of normal polyethylene.

A well-known manufacturer of oil-well tubing in U. S. claims to have perfected a superior type of product by coating the inside of both drill pipe and tubing by a .005-inch thickness of plastic material. This prevents oil well corrosion and fatigue. It is also said to minimize the accumulation of paraffin on the inside of the pipe.

Possibly on a percentage basis some of the greatest growth over the next few years will be in use of the relatively new epoxy resins and polyurethane foams and rubbers. A top plastics market expert predicts that the epoxies will expand some four to seven times by 1960. Surface coating resins will probably account for some 40% of total market. But the epoxies will also grow greatly in electrical uses, and in tools, dies and fixtures.

He sees the polyurethane foams expanding even more rapidly from their relatively small starting base.

The polyester resins, which now appear to be on the march, he sees practically doubling market by 1960.

Polyethylene Leads

But polyethylene continues to lead the field in the plastics race in both U. S. and Canada. In 1955, for instance, consumption of this amazing material zoomed 35% in this country to 16 million pounds. The rate of climb is even greater this year, running some 50% ahead of last year already. As for the longer term the average forecast is for a gain of close to 40 million pounds by the early 1960s.

This versatile plastic continues to push its way into more and more finished goods fields and to boost its usage in the well-established applications. Use in pipe again accounted for major resin consumption in Canada — accounting for some 4.7 million pounds in 1955. Actually, polyethylene is going into some 90% of all the plastic pipe being made in this country at the present time.

Although the polyethylene people are excited about the many new pipe applications opening up, like use in artificial ice rinks, irrigation for golf courses, use in municipal waterworks, etc., they still look on the farm water systems, e.g. for irrigation, for conveying water, as their bread-and-butter business. Polyethylene marketing people are calling another sharp boost in pipe application again this year; they claim around 6.4 million pounds will go into this market in 1956—a 35% gain.

Polyethylene film ran pipe a close second as a major consumer of the resin. In 1955 some 4.2 million pounds went into this broad application. Forecast is that this will rise to 5.9 million pounds in the current year.

Injected molded housewares made out of polyethylene was another large consuming outlet that increased its use of polyethylene in 1955. Total usage was estimated at around three million pounds. This will jump to 3.9 million pounds this year, the plastics people say.

Other big growing fields are in polyethylene wire and cable insulation and in paper coating.

New Producer

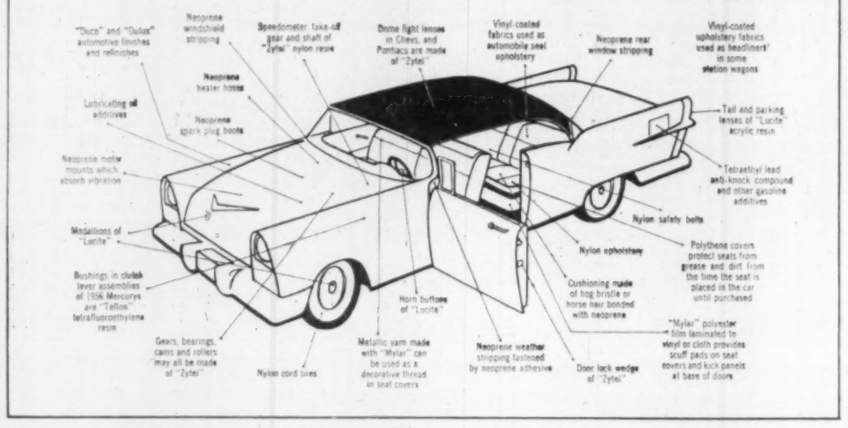
The biggest news in the polyethylene field has been recent announcement by **Dow Chemical of Canada** that it is considering construction of a plant at Sarnia to manufacture polyethylene resin. This will mean three major producers in Canada; **Canadian Industries** at its $14-million Edmonton plant; **Union Carbide Canada** by early 1957 at its new Montreal East plant now under construction. **C.I.L.** is also looking seriously into plans for expanding capacity of its Edmonton plant.

The glowing market forecasts, fast industrial pace in this country, and availability of refinery feedstocks in the three big refining centres — Montreal, Sarnia and Edmonton — have all combined to push the expanded polyethylene production program. Although Dow officials have not yet decided what process will be used at Sarnia there is a good chance that it will be a modification of the new low-pressure system. This will be the first such plant to use this process in Canada. Union Carbide Canada is installing a modification of the high pressure polymerization system at Montreal East.

The product of the low-pressure process is different in several important ways from the product of the standard process. It will be much more rigid and will withstand temperatures that would distort the usual flexible polyethylene. The plastics people think the new product will expand the polyethylene market application very substantially; there may be only an overlap of some 25%

(Continued on page 55)

Not All Plastic Yet, but... as this layout prepared by Du Pont of Canada shows, plastics made from petrochemicals play an important part in your car.



Plastics Market Record

Here's the market record, actual and forecast for 1956, for the fastest growing plastic on the Canadian market today.

	1955	1956
	—Consumption in lb.—	
Polyethylene pipe	4,700,000	6,300,000
Polyethylene film	4,200,000	5,900,000
Polyethylene wire and cable insulation	2,600,000	3,900,000
Polyethylene bottles and housewares	3,000,000	3,900,000
Polyethylene paper coating	1,100,000	1,500,000
Miscellaneous and unforeseen uses	400,000	1,500,000
TOTAL	16,000,000	23,000,000

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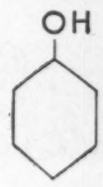
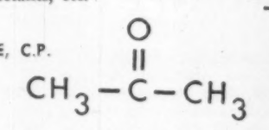


For reaction with aldehydes (particularly formaldehyde) for production of thermosetting resins used as molding powders, as adhesives and as protective coatings; for reaction with chlorine and subsequent treatment to yield 2,4-D, pentachlorophenol, etc.; for alkylation to yield raw materials for detergents, plastics, lubricating oil additives, etc.; for use as selective solvent in refining lubricating oils; for miscellaneous uses in disinfectants, etc.

ACETONE, C.P.



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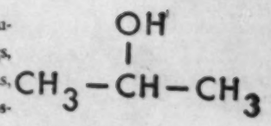
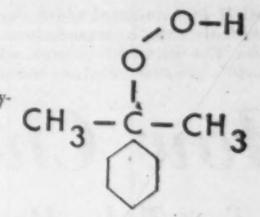


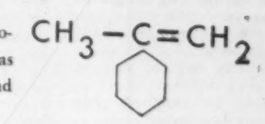
For use as solvent in manufacture of protective coatings, plastics and synthetic resins, liniments, skin lotions, cosmetics, pharmaceuticals, etc.

CUMENE HYDROPEROXIDE



For use as a catalyst for polymerization reactions.

ALPHAMETHYLSTYRENE



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Plastics Moving Into More Fields

(Continued from page 54)

with uses currently being served by the standard material.

Although the longer established plastic — polystyrene — had a good year in 1955 with a resin consumption of some 12 million pounds, up two million over previous year, the polystyrene people are not very jubilant. The industry is not realizing the potential business in this country, they claim, and the big reason is imports. Not imports of polystyrene resin but imports in semi-finished, or finished articles, made of polystyrene.

According to a survey made by one of the two major producers in the Canadian field — **Dow Chemical of Canad.** — the Canadian plastics industry consumed polystyrene molding powder in a ratio of 1 to 30 when compared with U. S. for 1955. The main reason for this big difference has been the heavy import of polystyrene articles.

Food Packaging

Although all the well-established market applications for polystyrene continued strong, packaging is considered one of the fastest growth potentials. Food packaging in particular is a big promising outlet that will show tremendous gains in the years to come, polystyrene people say. The new high-impact resins permit thin-walled, attractive, disposable containers for ice cream and many other products. A fast moving item is berry baskets for fruit.

The new formulations that the chemists are coming up with are keeping polystyrene well in the running. By means of the new high-heat, high impact, high chemical resistance types, chemists can build a broad range of desirable qualities into today's polystyrenes. Bright, attractive new colors are helping to add to the eye-appeal qualities.

Refrigeration is accounting for the major use of polystyrenes in Canada. Ease of fabrication is providing refrigerator manufacturers with a material from which basic components such as back panels, crisper trays, drip panels, breaker strips, freezer compartment doors, shelves, etc. can be easily and economically produced.

Vacuum forming, particularly suitable in the refrigeration industry is also contributing to the building field. Patterned board, simulated brick walls and marble-like patterns are now all available in polystyrene at economical prices.

Canada's two chief producers of polystyrene—Dow and Monsanto Chemicals — are large-scale exporters to many parts of the world. In 1955 total export amounted to some 24 million pounds despite the expanding production trend in overseas countries.

Phenolics: The long established phenolics are continuing to show an upward consumption trend in Canada and in volume still lead the field by quite a wide margin. Sales of phenolic resins in 1955, for instance, are estimated to have reached a peak of around 25 million pounds, up some 25% from previous year.

The major resin producer in this country — **Bakelite Co., Belleville,** Ont., **Union Carbide Canada** division — reports that sales for the first third of 1956 were "considerably improved" over comparable period of 1955. What's more, the upward sales trend is expected to continue for the balance of the current year, at least.

Market Outlets

Biggest market outlet for phenolic resins (in solids) is in heat insulation for industrial and residential buildings. The resin sprayed onto the fibres acts as a bonding agent.

Second largest market outlet is in glue production for the plywood industry. It is used here in liquid resin form. Big market is on the west coast where three major resin plants — **American Marietta, Monsanto Canada** and **Reichhold Chemicals**—are big users.

Molded products, particularly for the electrical equipment (wiring devices, handles, etc.) and appliances are probably the next largest users of the resins.

Laminates, industrial and decorative, is fast-growing market where volume potential is seen as much greater.

The phenolic people look on the shell molding market as offering a promising potential. Advantages to the foundry people are — improved quality castings, light weight, with a lower ultimate finishing cost of the components compared to the conventional green and casting method. Today, about 15 foundries are engaged in the commercial production of shell molded castings. By the end of 1956, it is estimated that this will increase to around 25 foundries.

Molded Drawers

Another promising new outlet is in production of molded drawers. These furniture drawers, molded in one piece of phenolic molding compounds, provide practical and inexpensive means of modernizing the storage areas of retail stores, institutions, factories and laboratories. Lightweight and durable, these plastic drawers do not swell or stick and are resistant to moisture, chemicals and heat.

A recent development where 1/32-inch birch veneers are laminated together, using a high phenolic resin content paper binder sheet, offers an interesting replacement for the traditional "wood furniture" used in the printing industry for type-setting. This new laminated product has more stability and wear resistance than wood.

Ceiling Tiles

Another new product with a large potential market is acoustical ceiling tile made of phenolic foam. These phenolic tiles will be competitive in price with the conventional phenolic tiles made of wood fibres and have equally good acoustical properties, the plastics people claim. The advantages of the plastic tiles include their being lighter in weight and resistance to moisture.

The increasing demand for the phenolics is bringing a sharp increase in capacity at the biggest Canadian plant—the Belleville plant of **Bakelite.** Work is now under way that will boost capacity by an additional 60%. One result of this expansion program, scheduled for completion by early 1957, will be that high temperature resins for the paint and varnish industry will now be made in Canada for the first time.

Biggest Market Gain

On a percentage basis the biggest market gain recently has been in the polyester resin field. Consumption in this country doubled in 1955 and so far in the current year is running 30-40% ahead of same period last year. Actual volume, however, is still relatively small—an estimated two million pounds was used last year. Like other plastic materials chemists have been able to make a wide range of polyesters with built - in qualities for specific end uses.

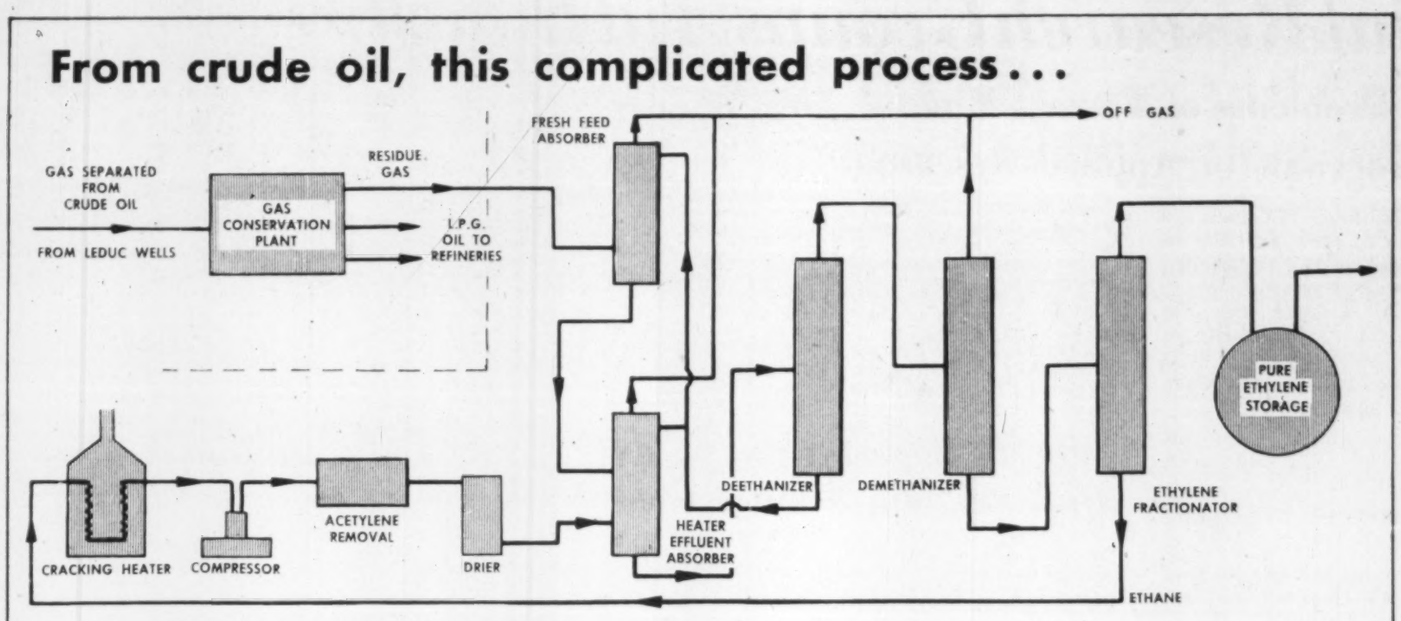
Although there are a number of big potential volume markets opening up, like translucent panels for construction in skylighting and side-wall lighting; corrugated sheeting for swimming pools, repair kits for repairing auto bodies, metal tanks, pipes, etc. — the big volume outlet is still in manufacture of boats made out of re-inforced polyester resin.

There are two producers of polyester resins in Canada now, **Naugatuck Chemicals** at Elmira, Ont. and a smaller producer, **Chemical Oil & Resin Co.,** Toronto. But a third major producer, expected to get into production this summer at Toronto, is **Reichhold Chemicals Ltd.**

Here are a couple of interesting Canadian polyester applications:

—Wilson Motor Bodies designed and constructed out of fibre-glass-reinforced polyester an auto van body at its Long Branch, Toronto plant. This is the first such van built for commercial use in Canada. The body is very strong and light, easily made. Cost, however, would have to be brought down considerably before wide-scale marketing is possible.

—Canadian General Electric is working on a 10,000 ammunition box order for the Department of Defense. The boxes are constructed out of reinforced polyester resins.



Phosphate Output Expanding

Phosphates, one of the three basic plant foods, and an important item in a broad range of consumer and industrial goods, is steadily expanding its chemical applications in this country.

Applications range all the way from fertilizers to matches, from synthetic detergents to uranium refining. It is used in pharmaceutical manufacture and metal treatment.

Canada's largest producer of phosphate compounds—**Electric Reduction Co. of Canada** — is expanding rapidly in line with the growing market. Construction is well under way now on company's new $5 million Vancouver North plant for manufacture of sodium chlorate, chiefly used in pulp and paper processing. Production is scheduled for April 1957.

Engineering plans are now well advanced on company's proposed $5 million Hamilton plant to make a broad range of phosphate compounds and phosphoric acid. This will supplement the company's long established Buckingham, Que. capacity for certain existing products, and include additional new chemicals.

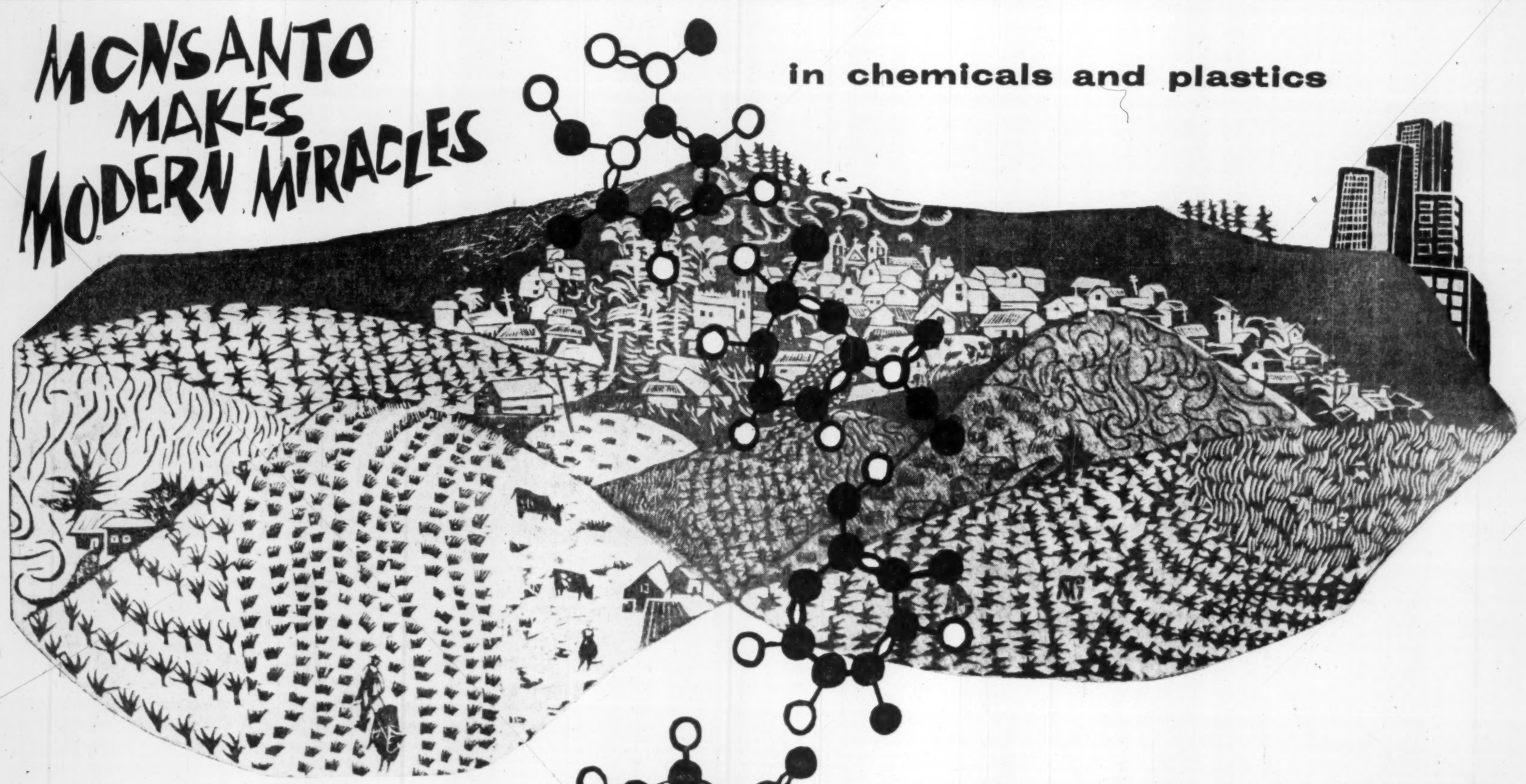
At company's Varennes, Que. plant, basic phosphorus is processed from phosphate rock imported from Florida. This waxy solid is now being converted into a number of derivates at the Buckingham plant.

Here are a few of them: sodium tri polyphosphate and tetra sodium pyrophosphate both used in large quantities in manufacture of synthetic detergents.

Food phosphates include mono calcium phosphate and acid sodium pyrophosphate. There is both a substantial domestic and export market for these items.

Red amorphous phosphorus is used in the match industry and for flare manufacture, also for defense applications. Phosphoric acid is also produced at the Buckingham plant with important uses in metal treatment and pharmaceutical manufacture.

Phosphates growth trend in synthetic detergents — probably its biggest volume industrial outlet — has closely paralleled that of the detergents industry itself. Back in 1946 the synthetic detergent market was relatively small in this country and demand for polyphosphates was negligible. But by 1954 this had zoomed to around 30,000 tons a year.



EVERY DAY IN THE YEAR, wherever you are, whatever you do, Monsanto makes your life easier, better, safer . . . in hundreds of ways which you may never have realized.

Monsanto chemicals and plastics add comfort and beauty to your home and its furnishings, protect and beautify its surfaces, both inside and outside.

In your car they preserve the finish, toughen the tire rubber, improve its fuel and lubricants, add shatter-proof safety to the glass, beautify the upholstery and interior appointments.

Monsanto chemicals and plastics help to make the clothes you wear, preserve and enhance the flavors of your food, condition the soil in which it is grown, destroy weeds and pests to increase soil productivity, produce better livestock and poultry, protect your health with pharmaceuticals, mineral supplements and germicides.

In every phase of your personal and business life, Monsanto chemicals and plastics make modern miracles that contribute to your comfort and well-being. Monsanto ranks with the largest companies in the world in the production of industrial chemicals and plastics . . . for some process in the manufacture of *almost every product* turned out by industry calls for one or more of the chemicals available from Monsanto.

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Provincial Research Groups Aid Industry

• Study Broad Problems of Farms, Mines
• Continuing Programs of Applied Research

Provincial research institutions in Canada are all stepping up the tempo of their activities in line with the fast industrial pace and the increasing call from business for their services.

They are particularly involved with the problems associated with the key industries of their own province. Their chief responsibility is the development of new natural resources, marketing problems of basic products.

- **In British Columbia the problems are connected with the lumber, the pulp and paper, fishing industries.**
- **In Alberta much of the work is connected with oil and natural gas.**
- **In Saskatchewan the growing and marketing of agricultural products is the chief concern.**
- **In Ontario the interests spread over a broad range of industries.**
- **In Nova Scotia most of the work has to do with coal, fishing, farming.**

Here briefly are the highlights of this work across Canada:

Pulp and Paper, Mining Raise Problems for B. C.

The British Columbia Research Council, organized in 1944 to help B. C. industry grow, is stepping up its research activity in response to the phenomenal development of the seaboard province.

The chemistry division contains both applied and fundamental research groups and an analytical services laboratory.

The applied group has been concerned for some time with the problem of odor and in particular has been concerned with the problem of odor control in kraft pulp mills, arising from the black liquor and digestor gases.

The black liquor is the alkaline sulphide solution used to dissolve lignin from wood, after it has reacted in a digestor with wood chips under elevated temperature and pressure. During this process organic sulphide materials are produced which stay in the liquor or in the gas which leaves the digestor tanks.

The Research Council has patented an oxidation tower to destroy these organic materials by use of atmospheric oxygen. The design is novel in that foaming of the black liquor is minimized and the digestor gases and liquor are oxidized together. During this process, most of the sodium sulphide in the black liquor is oxidized and the over-all sulphur balance of the pulp mill appears to be improved as a result of this.

The reasons for this and many other aspects of the oxidation chemistry of black liquor are not fully known. The problem is very complex and has received comparatively little attention so it is forming part of a continued program of applied research at the council.

On Sulphide Ores

The applied section of the chemistry division is also undertaking research on the hydrometallurgy of sulphide ores. These ores are the type most commonly encountered in B. C. where the mining is still largely for base metals, and the day is rapidly approaching when alternatives to the conventional smelting techniques for such ores may be desirable.

In hydrometallurgy, the ore is oxidized in an aqueous suspension and the metal brought into solution from which it may subsequently be precipitated or separated by electrolysis. New methods for using electric power for this oxidation are being studied, and the use of atmospheric oxygen via the medium of bacteria is receiving a preliminary evaluation.

The division also carries out a diversified program of trouble shooting, mainly for the smaller secondary industries and is concerned with the development of new products and formulations for local manufacture.

The fundamental group in the chemistry division is split into organic and physical chemistry.

To supplement the practical interest in odor control, work is in progress to determine the fundamental basis of odor perception. No convincing explanation is as yet forthcoming of why different compounds give rise to different odors or of how the nose detects these odors and transmits a message to the brain.

Work in progress is throwing light on this problem and there is evidence that the key rests in the vibrations of molecules as a whole (rather than the vibration of certain sections of the molecule). If this theory can be confirmed, great strides will be made in the prediction of what compounds should give a particular type of smell. The practical application of this to such fields as insect and fish repellancy is obvious.

The main activity of the organic group is the undertaking of synthetic and structural studies on the biologically important group of compounds known as phosphate esters which are components of nucleotides and nucleic acids. These substances are one of the more important components of all living cells and their behavior is intimately connected with the processes of all growth and division.

The physical chemistry section is devoted exclusively to electrochemistry and surface kinetic studies. Work is in progress to study the kinetics of metal deposition from alueons electrolytes onto solid metal surfaces, using modifications of the techniques of constant current polarization, constant voltage and a-c impedance measurements at present used for studies at mercury surfaces.

A knowledge of the state and properties of the surface oxide on materials such as tantalum, niobium, aluminum, silicon, zirconium and germanium is now of prime importance in the defense and electronic industries which make increasing use of such materials in capacitors, rectification units and transistors.

The council will open a new 9,000-sq.-ft. laboratory wing at the end of June. Designed to provide functional facilities for a wide variety of research work in many fields of industrial investigation, it probably will be opened officially by Premier W. A. C. Bennett.

Alberta Concentrates Study On Coal, Oil, Natural Gas

The Research Council of Alberta is rapidly expanding the scope of its operations. In large part this is due to the completion of the new Research Council laboratory and pilot plant which is enabling a much fuller program of work to be undertaken in all phases of its operations, such as its research programs on coal, petroleum, natural gas, clays, etc.

Considerable expansion is also taking place in its field operations in geology and soils, the number of field parties being materially increased. A brief outline of the Research Council's major activities follows:

Petroleum

Although the petroleum division of the Research Council has many varied projects under way in the study of Western Canadian crude oils, the major study at the present time of a chemical nature is concerned with the geochemistry of petroleum. Western Canada is almost unique in the world oil picture as a working ground for a study of the occurrence and accumulation of crude oil.

The geology of the western plains is relatively simple and clear cut, and the variety of crude oils available for study is very great. These two facts combine to make the study of the geochemistry of petroleum in this area a worth while and enriching undertaking.

The greatest stumbling block in petroleum analysis for years has been the inability of chemists to develop a precise means of characterizing the heavier components of a crude oil. Many methods have been used —ultraviolet spectrometry, infrared spectrometry, mass spectrometry, component analysis, chromatography, and so on — with limited success heretofore.

Council chemists have tried a somewhat different approach and have studied the occurrence of a very specific class of compounds associated with the heavier ends of petroleum—the compounds that contain the trace metals in the crude oils.

The two most abundant metals in crude oils are vanadium and nickel, and these two metals appear to be part of the very highest boiling components of the oils, thus offering a fairly specific analytical approach to characterizing that part of the oil which is of greatest importance in the study of the origin and accumulation of crude oil.

A survey of the crude oils of Western Canada for vanadium and nickel has been completed. First indications were that metal analyses could be used for correlation from one horizon to another; on further study it became apparent that the horizon-to-horizon correlation was part of a general picture of crude oil maturation. As a result of this hypothesis, work was undertaken to follow the change of metals concentration in a heavy crude oil during thermal maturation in the laboratory. The results indicated that while thermal action in the genesis of crude oil is important, it is not the only factor involved because it itself is not sufficient to account for the degree of maturation of an oil during its accumulation in the reservoir in which it is found.

Further trace metal work is being done in the Pembina field to examine the variations within a given oil field. Results to date indicate a regularity that will probably point to specific information regarding the mode of accumulation of the Pembina oil from its source rocks.

Handling Heavy Oils

In the petroleum division, Council is expanding its chemical engineering program very much. Work is centring around the handling of heavy crude oils. One completed project dealt with the settling of sand particles through emulsions of water in crude oil. Results here made it possible to predict settling rates under specific conditions, and thus facilitate the handling of wet crude oils that contain suspended sand.

Two pilot plant studies are under way: one deals with the gravity flow of solids and sticky material from bins and hoppers to provide the understanding which is required for the intelligent design of equipment for handling such materials in plants of any capacity; the other deals with the handling and transportation of heavy black oils which often contain emulsified water and other impurities.

Work is progressing on the resolution of the sulphur-containing compounds in various fractions of McMurray oil-sand oil. Methods of separating the sulphur compounds are being studied, the ultimate objective being the elimination of the sulphur from the oil.

Fundamental research is being undertaken in an attempt to elucidate the mechanism of the cracking of natural gas hydrocarbons. Information obtained in these studies will be useful in the chemical utilization of natural gas and in the operation of oil cracking units.

Work on the natural gas utilization section has been focused on the pyrolysis or thermal decomposition of the lower paraffin hydrocarbons present in natural gas.

A pilot plant investigation of a new process for making carbon black from natural gas has been concluded and the results have been presented in a current Research Council of Alberta publication. The project represented an attempt to "scale up" some laboratory experiments originally carried out by the National Research Council some years ago. The work has demonstrated that the process may be technologically feasible; however, the economic possibilities do not appear attractive at the present time.

The production of two important chemical intermediates in the petrochemical industry — acetylene and ethylene — from the high temperature thermal treatment of natural gas hydrocarbons, is the major experimental project currently under way. The problems involved are of an engineering nature and include such considerations as reactor design, heat transfer rates, and gas purification. Particular attention is being paid to butane as a chemical raw material because of its ready availability in Alberta when gas export becomes a reality.

Long-term studies have also been under way on the partial oxidation of the light hydrocarbons, particularly butane, to yield valuable oxygenated chemical products. The overall characteristics of the reaction have now been fairly well established and thought is being given to extending the work to include detailed mechanistic studies.

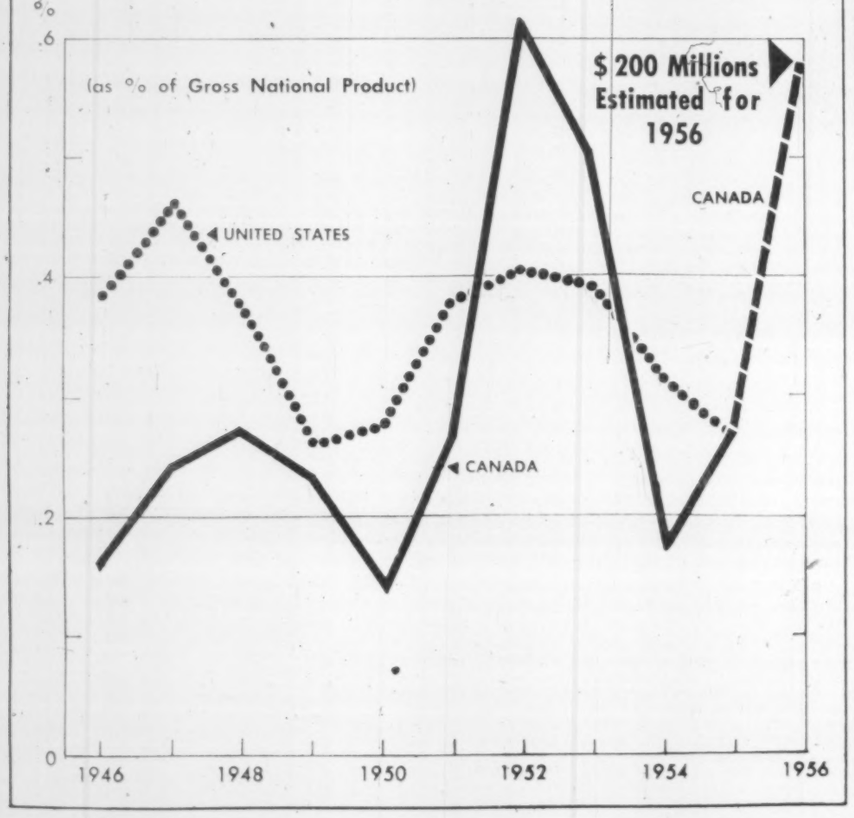
Another important phase of the program involves studies on the adsorption of natural gas components.

Industrial Engineering Services

The section of industrial engineering services is continually expanding its assistance to industry. Through its technical information service, in co-operation with the National Research Council, the results of scientific research and technological advances are being made available to manufacturing industry. The program of field contacts to acquaint industry with the value to them of

(Continued on page 57)

New Wave of Chemical Expansion



Petrochemicals Alberta Oil and Gas Vital Partners

Canada's expanding oil industry centred in Alberta, is now facing a secondary advance of subsidiary industries. The natural gas and sulphur plants of the Shell Oil Company of Canada, Limited at Jumping Pound in Southern Alberta are typical of this development. These plants were established in 1951, and following multi-million dollar extensions last fall, the capacity for gas output was increased 85%, to 60 million cu. feet daily; the sulphur-producing capacity was expanded from 30 tons a day to 80 tons a day.

The bulk of Jumping Pound's sulphur production is used in the manufacture of sulphuric acid destined for use in leaching processes in the uranium fields of Lake Athabaska region, and in other mineral refining processes. The gas output supplies homes and industry in Calgary, Banff and other Southern Alberta communities.

Illustrated is the sulphur plant at Jumping Pound, with a sulphur stockpile in the foreground. Massive blocks of sulphur weighing as much as 2400 tons make up this stockpile.

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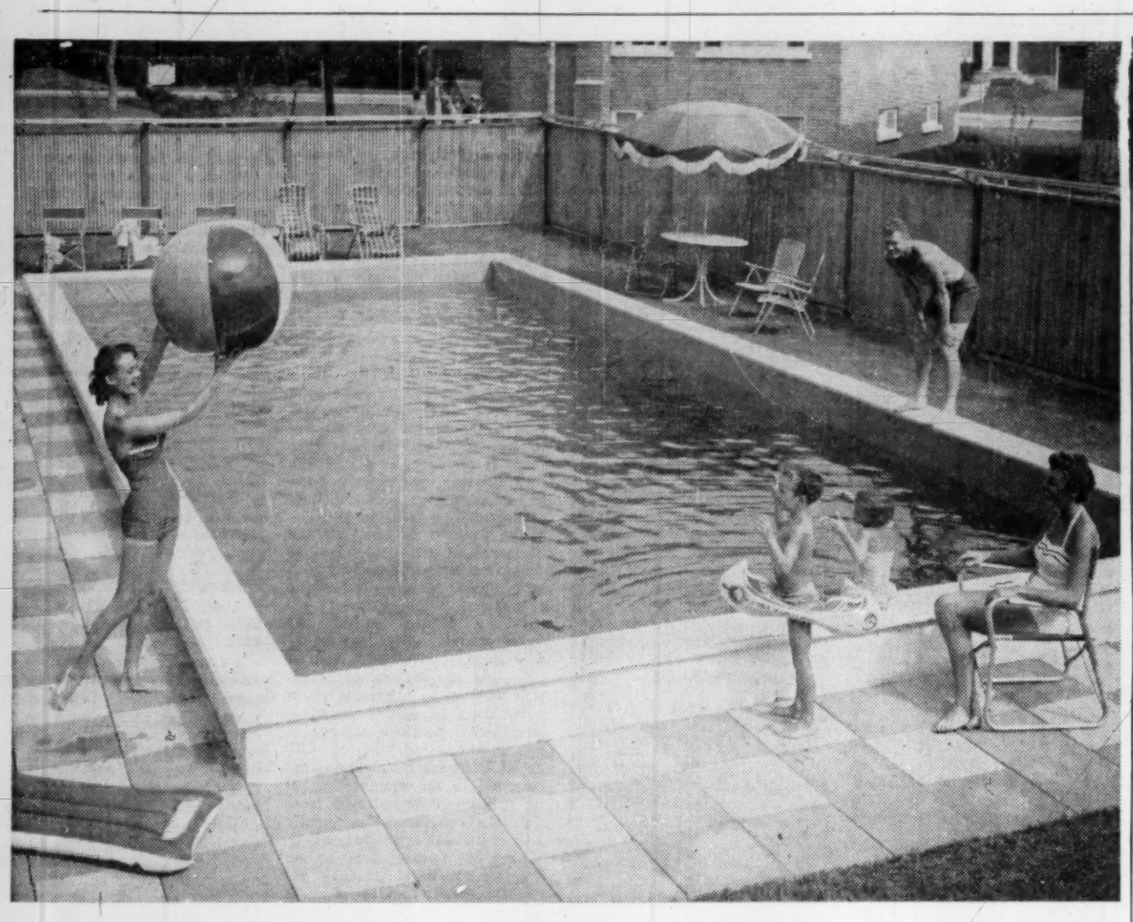


INSTALLATION OF a 20-gauge Vinylite plastic liner made it possible to build this 40-ft. by 20-ft. concrete block pool at approximately one-third of cost of regular concrete construction of comparable size. Pool floor beneath the liner is sand. Sheeting is supplied to the manufacturer of the liner by Canadian Resins & Chemicals Limited.

Plastic Sheet Finds Many Uses

From Handbags to Outdoor Furniture, It Finds Markets

For the first time in its 15-year history Canadian Resins & Chemicals has added another plastic material beside vinyl.

Since May, the company has been manufacturing polyethylene film and flat tubing at the present facilities of its converting division at Ste. Therese, Que. Limited production only is available now, pending completion of new plant which when finished, will contain three production lines for manufacturing and treating of the polyethylene film and flat tubing. Full production is expected by latter part of summer.

The expansion of production facilities for vinyl resins at Shawinigan Falls is now 95% completed. Resins include those for manufacture of calendered film and sheeting, coated fabrics, extrusion compounds, flooring and phonograph records.

One of the most promising markets for vinyl application is in fabric laminates. Outdoor furniture in particular is a promising growth outlet in this application. The triple laminated construction of these new materials consists, first, of clear vinyl film placed over printed film and fused together, thereby permanently locking in the color and pattern of the print. This combination is laminated to a knitted or woven fabric base, and the resultant laminate can then be surface embossed, if desired.

In the vinyl film business imports from U.S. present as much of a problem as ever. The disparity in the tariff structures of the two countries still exist, with the result that Canada is a popular market for surplus plastic goods from across the border, the vinyl people claim.

The handbag market, always a good outlet for sheeting, is feeling the effect of U.S. competition. But while sheeting consumption has suffered losses in this field, imported gains have been made in other directions.

Market Outlet

The wire and cable industry, a leading market for vinyl insulation, has been providing a steadily expanding sales outlet. The industry reports a 17% increase in dollar sales for 1955 over 1954 and current sales running 10% ahead of last year. With every major Canadian wire and cable manufacturer announcing plant expansions, the future looks promising for this field.

Sales of flooring resins have benefited from the remarkable growth in the acceptance of vinyl asbestos flooring during the past two years.

Dominion Bureau of Statistics reveals that vinyl asbestos tile output in first three months of this year increased to 3,290,000 sq. ft. from 2,470,000 sq. ft. in same period last year, a 33 1/3% increase.

There is a steadily increasing use of vinyl sheeting and coated fabrics in the automobile manufacturing field. This growing market, however, is being threatened by growing European resin imports, especially plasticol resins.

One of the most flourishing applications for plasticols has proved to be slush molded rainboots. In the four to five years since the first Canadian-made products appeared on the market as a more or less novelty item, they have gained in popularity to the extent that they are now a "must" for women on wet days.

A rapidly expanding market outlet has been in vinyl coated fabrics for wall coverings for use on institutions and recreation rooms. Monsanto Canada reports promising market growth in this field. Another increasingly popular line is vinyl-coated non-woven fabrics. This features a two-way stretch and is used in upholstery in automobiles and for house furniture.

The early year tariff hike to 25% on vinyl coated fabrics coming in from U.S. has been of considerable help to the small Canadian industry. The former tariff level was 15%.

Provincial Research Groups Help Chemical Industry

(Continued from page 56)

the technical information service is constantly being increased in scope. Technical assistance is also constantly provided to other government departments.

Additional equipment for carrying out testing and research is being acquired and this will increase the opportunity of rendering such services to industry. For example, a research project which is of importance in the conservation of natural resources is aimed at the utilization of large quantities of light petroleum gas. One particular direction is in the field of internal combustion engines, including tractors. Equipment and research apparatus has been set up to determine efficiencies, new methods of butane utilization (particularly cold weather operation), and performance data useful for propane operation.

Ontario Research Foundation Covers Broad Industrial Field

During recent years the Department had made outstanding contribution to our knowledge of the inorganic phosphates.

The air pollution laboratory has completed another busy and successful year. The work being done in the Sarnia area with the support and co-operation of the industrialists has gone forward with helpful results. We now have the records covering three years and relating to SO_2 concentration and dust of various kinds in the atmosphere.

In general the figures show that the condition in the residential area compares favorably with that in many cities, but there is a problem to be faced in the growing industrial area. What is more important, the over-all problem has been complicated in recent months by recurrent conditions leading to complaints of eye watering and skin irritation. At this stage it would be premature and unwise to speculate as to the cause or causes of these occurrences. We propose to concentrate our resources on careful analyses of the atmosphere in relation to climatic conditions, to determine the organic constituents and to estimate the ozone concentration.

The air pollution survey in Hamilton which is supported by industrialists in that area has been started successfully.

Water Pipes

In the laboratory which is supported by Page-Hersey Tubes the long-term investigation of various types of pipe continues. Two stations involving different compositions of domestic water have been maintained for 18 months. Increased attention has been given recently to problems associated with use of plastics in the manufacture of pipe.

Work on the synthesis of alkyd resins by a low temperature process has continued although the program has been interrupted by pressure of other work. Preliminary tests with resins produced in the laboratory suggest that they have superior properties compared with representative commercial products.

In the paper industry one of the more recent developments has been the use of what is known as the ammonia base method for pulping in the digester. The process will encroach more rapidly on the older methods if it is found possible to recover a substantial portion of the ammonia from the discharge. This problem has been investigated with the financial support of J. F. Pritchard & Co., Kansas City, Mo. The method being developed is based on the use of ion exchange resins.

The development of a thermosetting binder from phenolated waste sulphite liquor and formaldehyde continued, and experimental work has supplied reliable information regarding the many factors which contribute to the strength of the finished board.

atory the work still largely con-

In the Howard Smith laborcerns problems associated with the oxidation of lignin in alkaline solution. Another interesting compound was isolated and identified among the products, namely, dihydroconiferyl alcohol. A procedure for separating this on a commercial scale has been worked out, and a bulk sample has been prepared. This is now being tested as an antioxidant.

Use the Services of ▶ THE ONTARIO RESEARCH FOUNDATION

The Ontario Research Foundation is prepared and equipped to carry out research programs, development programs and investigations of both major and short term character in the fields of chemistry.

Here are some of the fields of current work:

Adhesives — laminated plastics
Corrosion prevention and control
Electroplating
Inorganic chemicals
Kinetics of reactions
Oils, fats and waxes — petroleum products
Paints, varnish, lacquers and related products
Pulp, paper, printing, packaging and containers
Polymerization
Products from non-metallic minerals
Smoke and industrial fume control — air pollution studies
Utilization of new raw materials
X-ray identification materials
Statistical analysis and quality control
Utilization of Industrial and Municipal Wastes

Address Inquiries to:

Dept. of Industrial Research Services
Ontario Research Foundation
43 Queen's Park,
Toronto, Ont.
Tel.: WA. 4-6201

Uses of Coal and Peat Moss Under Study in Nova Scotia

Research on some of the fundamental problems related to the utilization of coal has continued at Mount Allison University under the direction of Dr. A. C. Cuthbertson, assisted by Prof. Ross Barclay. The oxidation, solution and pyrolysis of coal have been studied in order to gain insight into its chemical nature as a basis for more extensive use of coal.

The mild atmospheric oxidation of coals has long been of importance since it creates problems of coal storage, weathering, loss of coking power and spontaneous combustion. Furthermore, many products can be obtained from partially oxidized coals such as colloidal fuel, ion exchange resins for water purification, soil conditioners and synthetic manures, wood stains, chemicals for organic synthesis, and active carbon and carbon black. Many of these have important uses but have not yet been developed on a commercial scale.

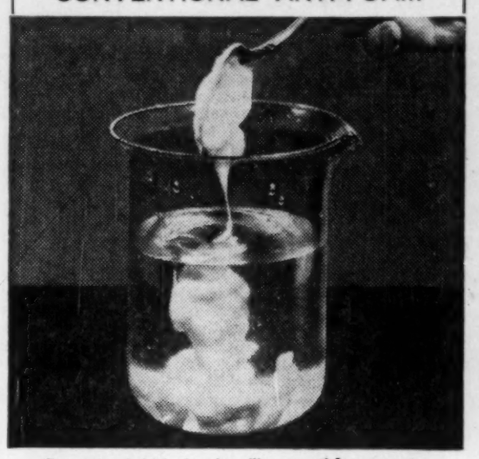
A study of humic acids which are formed by oxidation of coal was undertaken by students working with Prof. Ross Barclay and revealed that these acids are too complex to investigate by direct methods. Accordingly, an indirect approach using easily oxidized phenols was adopted. These could be synthesized and then oxidized to form model humic acids. One of the best was pyrogallol, be-

(Continued on page 67)

KILL FOAM THE EASY WAY...

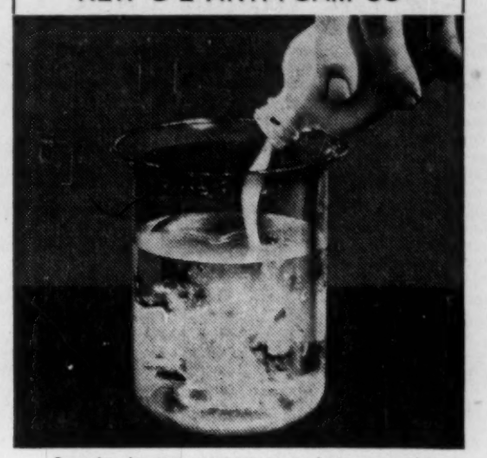
New G-E silicone Anti-Foam 60 disperses easily—pays for itself

CONVENTIONAL ANTI-FOAM



Conventional high-viscosity silicone anti-foam agents (above) do not disperse readily in water—require vigorous stirring to prepare working concentrations.

NEW G-E ANTI-FOAM 60



Low-viscosity G-E ANTI-FOAM 60, however, can be *poured*—and dispersed instantly!

Costly, troublesome foaming can now be controlled—more easily—with the new General Electric silicone ANTI-FOAM 60. The superior dispersibility of this low-viscosity silicone emulsion means that it can be used as supplied, or readily reduced with water to any desired concentration. Little or no stirring is required.

PAYS FOR ITSELF

You'll find ANTI-FOAM 60 pays for itself by the way it reduces processing time, eliminates costly boilovers, increases kettle capacity. Incredibly small amounts are needed, for example: 5 PPM in yeast fermentation, 10 PPM in latex stripping and coatings, 50 PPM in pulp processing.

An addition to the well-known G-E Silicones SS-24 and SS-66, the new ANTI-FOAM 60 is designed primarily for aqueous systems, finds application in practically every industry—textile, paper, rubber and chemical—to name a few. Where can it help *you* control foam? *Try ANTI-FOAM 60 at our expense!*

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Please send me a free sample of the new G-E silicone ANTI-FOAM 60.

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This is the kind of service you may expect when you buy a Barrett Roof. Actual building records show that Barrett Roofs serve years *beyond* their bonded periods—without maintenance or repairs.

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They Work For Industry Today And For Canada's Tomorrow

• NRC Laboratories Seek New Designs, Ideas
• Their Chemists Probe Fish, Spuds, Blood
• The Result: More Efficiency In Your Plant

The words "National Research Council" actually refer to an Advisory Council of 21 members. Most of these men are eminent scientists from all across Canada; others represent labor and industry.

They are responsible to a committee of seven cabinet ministers. The Members of Council, who serve without salary, select the NRC staff, award scholarships and grants-in-aid of research, and are responsible for the general direction of the laboratory work.

The same words exactly — "National Research Council" — are often used to describe the Council's laboratories.

These laboratories are organized in nine divisions and two regional institutions. This article covers only the two chemical divisions and chemical work done in other parts of the Council.

Pure Chemistry

The Division of Pure Chemistry is organized around a nucleus of outstanding Canadian chemists, who direct about twice their own number of young postdoctorate fellows from all over the world. The work, of course, is long-range and fundamental: it has sometimes been described as "work that may become useful during the next five hundred years."

These products of pure curiosity seem to be very far removed from ordinary life. Nevertheless, the Division's top expert on photochemistry (who also happens to be president of NRC) was invited to spend two weeks lecturing to the chemists of a large oil company.

The head of the group on organic spectrochemistry sometimes speaks to groups of applied chemists who are employed in an industry. And the head of the alkaloids group (who happens to be director of the division) is frequently invited to talk to the scientific staff of large drug houses. All group leaders are active in university circles. It may be that some of his work will become useful sooner than they think.

Applied Chemistry

In the past year the Division of Applied Chemistry has continued to work in fields that have a bearing on the best use of Canadian resources and on chemical problems of wide general interest.

Corrosion — Corrosion costs the people of Canada over three hundred million dollars a year. The oxidation of iron and its alloys is an extremely complex problem. Considerable progress was made in explaining just how the initial products of the reaction are formed.

Catalysis — While the corrosion group is busy trying to prevent oxidation, several other groups are doing their best to enhance the oxidation of certain chemicals such as ethylene. The product, ethylene oxide, is a very active chemical and the starting point of many other useful materials such as antifreeze. It is done by the use of oxidation catalysts made of certain metals. A calcium-silver system is being examined in detail and shows considerable promise.

Rain Repellents — Another section has produced a number of rain repellents prepared primarily to improve vision through aircraft windscreens. These are receiving wide acceptance.

Rubber—Use of lignin in rubber compounding and production of improved, cyclized rubber-base adhesives have been investigated. In addition, several rubber formulations have been developed with definite properties for specific purposes —a sort of tailor-made rubber for each special job.

Textiles — One of the functions of the textile laboratory is to advise the Canadian Research Institute of Launderers and Cleaners with whom the Council has a formal agreement. The aim is to maintain a high standard in operating Canadian cleaning establishments. Assistance is also given to government departments on such problems as the moth-proofing of Service clothing. Radioactive tracer techniques have led to a much better understanding of detergent action and indicate possibilities for obtaining better efficiency in laundering. Studies on microbiological and ultra-violet degradation of textiles have led to improved preservation treatments in cordage, awnings, fishing gear, and other textiles that are exposed to outdoor conditions. It is impossible to say how many millions of dollars the work of this laboratory is saving now or will save in the future.

Applied Biology

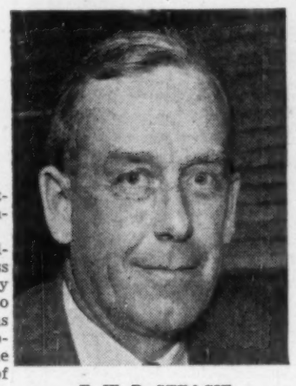
Much of the applied work in this division is undertaken in co-operation with industry or for government agencies. One example concerns the transport of perishable food: studies on railway refrigerator cars have been undertaken jointly with the Canadian National Railways, the Canadian Pacific Railway, and the Fisheries Research Board.

Improved designs and operating procedures were worked out in the laboratory and were then confirmed by full-scale transcontinental road tests. Changes in the design of the Canadian overhead bunker type of refrigerator car, using ice and salt, have made it one of the best of its kind in the world. Improvements developed in the laboratory have now been adopted by both railways and are incorporated in all new refrigerator cars.

Frozen concentrated milk — This relatively new product is prepared by concentrating milk to one third the original volume, which reduces processing and handling costs. Unlike heat sterilization, this method does not lead to undesirable flavor changes: when freshly prepared, the product may be rediluted to a beverage indistinguishable from fresh bottled milk.

Unfortunately, this high quality is lost rather quickly unless the product is stored at very low temperatures (—20 F to —40 F). Although precautions must be taken to avoid development of oxidized flavors, the major problem in the storage of frozen milk is that it undergoes changes that lead to separation of casein as a curd when the product is thawed.

Recent studies are designed to determine the basic causes of this change and some progress has been made.



E. W. R. STEACIE
President,
National Research Council

Atlantic Lab

The Atlantic Regional Laboratory studies the preservation and use of food products and some of the problems encountered by secondary industries in the area. Projects during the past year include the following:

Cider—A blend of juices from apples grown in the Annapolis Valley has been fermented with cultures of special yeasts and methods have been worked out to produce an improved hard cider with controlled acidity and alcoholic content.

Storage of potatoes — The biochemical changes which the commoner varieties of potatoes from P.E.I. undergo during storage have been determined. In general the Irish Cobbler was the most satisfactory variety and 50 F. the best temperature for storage. Acceptable chips could not be made if the free sugar exceeded 0.4%.

Fish — The cause of "flakiness" in fish fillets has been ascribed to autolysis of muscle proteins. This may be related to the metabolic condition and the temperature prior to filleting and storage.

Pulp and paper — Considerable progress has been made in a study of the chemical composition of pitch formed in pulp and paper mills. Tests have been carried out on the efficiency of various additives to prevent the deposition of pitch.

Anticoagulant for blood—The anticoagulant for blood which was synthesized from laminarin last year and which is proposed as a substitute for heparin, has now been shown to be about a third as potent but to act in the same manner as heparin.

Iron and steel—An apparatus has been designed to measure the activity of ferrous oxide in slags — by means of the electrical conductivity—and efforts are being made to modify it so that the apparatus can be used industrially in open-hearth furnaces.

Dryer for rockweed — The optimum conditions for drying rockweed have been worked out in an experimental batch dryer. The cost was calculated to be about ½c lb. A short period of preliminary aging in air appreciably shortened the time of drying required.

Prairie Lab

The major function of the Prairie Regional Laboratory is to develop processes that will use the agricultural products of the prairies. Some of the work is aimed at promoting an increase in secondary crops. Rapeseed, which is grown in areas that produce low protein wheat, is becoming an important crop in oil seed production. Efforts are being made to determine the suitability of this oil for use in food products, and to increase the use of rapeseed meal in animal feeds.

Strawboard — Preliminary cost estimates for producing fibre board and hardboard from straw have been prepared and published. These reports have aroused considerable interest in building board production, and a large number of enquiries were received from groups interested in commercial development. Plans for construction of a $1.5-million strawboard plant, to be built on the prairies, were recently announced by a western firm.

A possible sizing material — A relatively simple method for making fatty acid chlorides was developed in connection with a fundamental problem concerning the theoretical treatment of oil fractionation. These acid chlorides are being investigated for their ability to size textile and pulp products.

Mechanical Engineering

While a large part of the work in the Division of Mechanical Engineering continued to be related to defense, work for industry is increasing year by year.

In addition to the industries that one might expect, such as aircraft, ship building, and heavy and light manufacturing, the division also co-operates with pulp and paper and chemical industries. One of the many laboratories has to do with fuels and lubricants and their projects during the past year have included work on combustion, stability of naval boiler fuels, brake fluids, and aviation fuel.

In addition to a number of specific problems, a large volume of specification testing was done for the Department of National Defense.

Links With Industry

The National Research Council is linked to Canadian industry in several ways — through visits back and forth between the laboratories and the industries; through the work done in its laboratories (which has already been considered), through its system of associate committees, through its patents organization, and through its Technical Information Service.

It is almost impossible to say how many visits take place each day between NRC and industry. A spot check, for a short time, showed that it is not at all unusual to have as many as 100 visits a day — people coming in ones and twos to consult various specialists.

Associate Comittee

In Canada, with a large area and a relatively small population, the need for effective co-ordination of all its scientific work is obvious. One of these co-ordinating mechanisms is the system of Associate Committees, established by NRC in 1917.

The Council often takes the initiative in bringing together those best equipped to deal with scientific or technical problems of national scope. These associate committees combine the wide practical experience of industrialists with the special technical knowledge of scientific workers — hundreds of experts from all across Canada— who serve without salary. A single committee may have 30 or 40 different institutions represented in the membership of its subcommittees, drawn from federal, provincial, university and industrial organizations.

Each committee acts as an autonomous unit. It may receive a grant from the Council or assistance from other sources, but it is completely free to use these funds at its own discretion. The Council looks after the administrative details; the committee outlines the researches, recommends the laboratory in Canada in which they should be conducted, and assesses the merits of the results.

Canadian Patents

Another link with industry is through Canadian Patents and Developments Limited, a body set up, in the first place, to handle inventions of the National Research Council, but which now handles the inventions of many other public organizations.

They do not sell patents, but then rent them to industry under a license system. The inventors get a share of the profit, but most of it is plowed back into further research and development.

Technical Information

Another useful group is the Technical Information Service, set up to help Canadian industry and especially smaller industries. About 60 million pages of technical material roll off the world press every year, in many languages, and the Technical Information Service tries to make the useful part of this great mass of material available to particular industries. They answer between 7,000 and 8,000 enquiries a year.

This group was set up for the sake of smaller industries primarily, with field representatives to visit small industries in their districts. Now that the service is operating, several provinces have agreed to take over the local field services in British Columbia, Alberta, Saskatchewan, Ontario, and Nova Scotia. TIS is operating the field representatives in other districts.

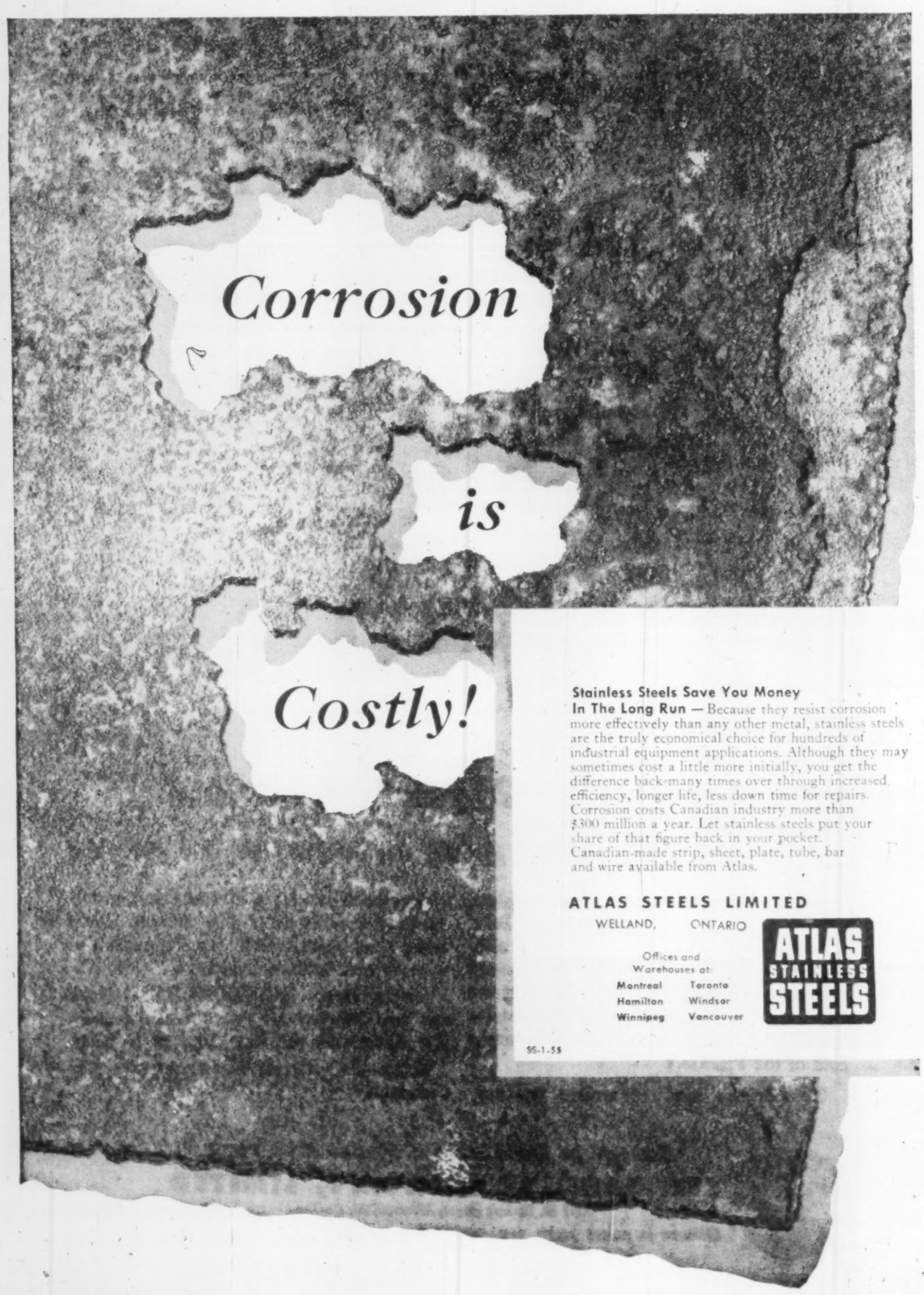
Enquiries dealt with by the Technical Information Service have been well distributed among the various fields of technology. However, it is interesting that the largest of these fields of technology is that of chemistry and chemical industries, which account for slightly more than 25% of all enquiries.

Of course, on some problems no answer exists and research may be necessary. These problems fall into three categories. Some are obviously of national interest and may therefore be undertaken entirely at the Council's expense.

Secondly, when a company has an interest in a project of less than national scope the expense may be shared by the company and the Council.

Finally, when facilities for an investigation are not available elsewhere in Canada, the Council may undertake a specific piece of industrial research on a fee basis and the results become the property of the company. However, industry is encouraged whenever possible to do its own research—and if they have no facilities, they are encouraged to create them as soon as possible.

From all this it will be seen that each problem presented to the Council is considered on its merits and dealt with in what seems the most efficient and practical way.



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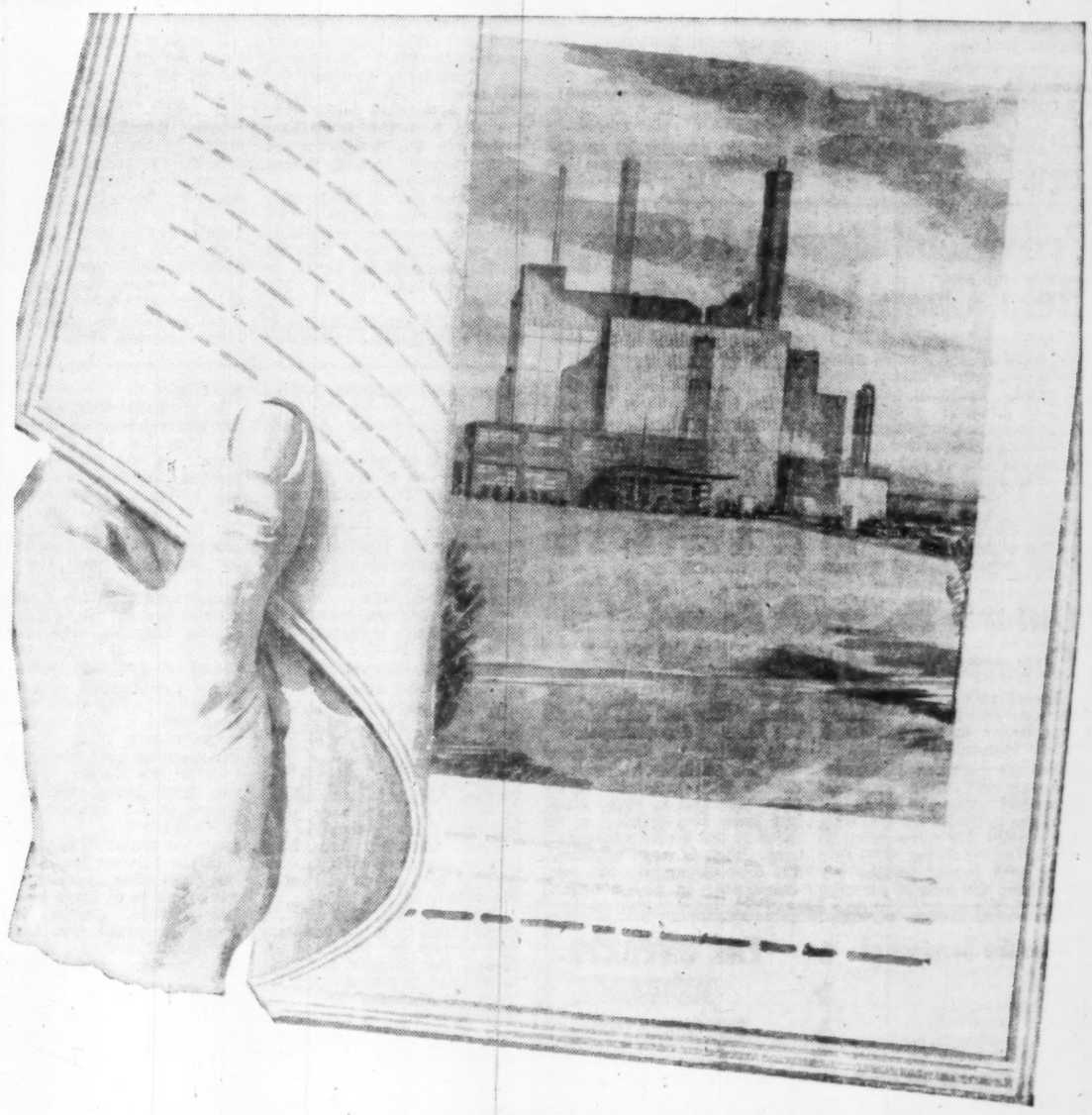

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ETHYL

Research Is Key to Chemical Progress

Here's What Some Canadian Companies Are Doing

Are Canadian chemical producers spending enough on research? Are they depending too heavily on developments outside the country and failing to produce a technology suited to Canada? Recently a top chemical research expert whose company has come up with one of the most promising developments in years, claims it's virtually impossible for a single Canadian company to shoulder the financial burden of carrying a new product through the various costly development stages to market. What do other Canadian chemical leaders think of this? What are they doing about research? Here is a special report from some of the leading companies:

Du Pont of Canada

"It is becoming more and more an axiom of survival that Canadian industry of any consequence should undertake its proper share of research, to develop a technology suited to Canadian needs."

The remarks were made recently by Herbert H. Lank, president of Du Pont of Canada.

There is a compelling need for research in Canada by industrial organizations, and the Canadian economy is attaining a stature which provides incentive for innovation.

"We cannot ignore the accelerated advances and obsolescence of technology; nor can we ignore the very real dangers of depending entirely on borrowed technology which must in any event be adapted to Canadian circumstances and conditions."

Expansion of the company's research efforts had been slowed by the lack of skilled scientists, although recruiting among this year's graduating classes for this and general expansion purposes had increased. So far, more than 100 had been taken on, about half of them engineers and chemists and half general arts, commerce and business administration graduates.

Du Pont completed and placed in operation during 1955 a modern research centre at Kingston, Ont. The new laboratory, located on a 25-acre site adjacent to the nylon spinning plant, was planned to serve the immediate needs of the company in conducting its research program. The building incorporating the most modern facilities is designed to accommodate about 40 research chemists along with the necessary supporting personnel.

C-I-L

We have more than 200 technical people in C-I-L engaged in research and development, and spend in excess of $2 million a year on these activities. The work is carried out at our plants, at head office, at divisional research laboratories and at our central research laboratory in Beloeil.

This work varies from "trouble-shooting" on the plant to "long-haired" fundamental research at the laboratory bench; from the design, erection and operation of semi-technical or pilot plants to market research; from the investigation of customer troubles in our technical service laboratories to economic studies; from the broad studies of natural resources developments, industry developments, and developments in other countries to profitability studies of potential new ventures for C-I-L.

To carry out this work we have recently expanded our research and development facilities and expect to continue this expansion. A half-million dollar expansion of both buildings and equipment in our central research laboratory at Beloeil was opened last year.

The paints research and development laboratory at Toronto has been doubled in size in the last year. In addition to the recently completed polyethylene evaluation laboratory, costing $200,000, at Edmonton, a plastic technical service laboratory at Toronto is under construction.

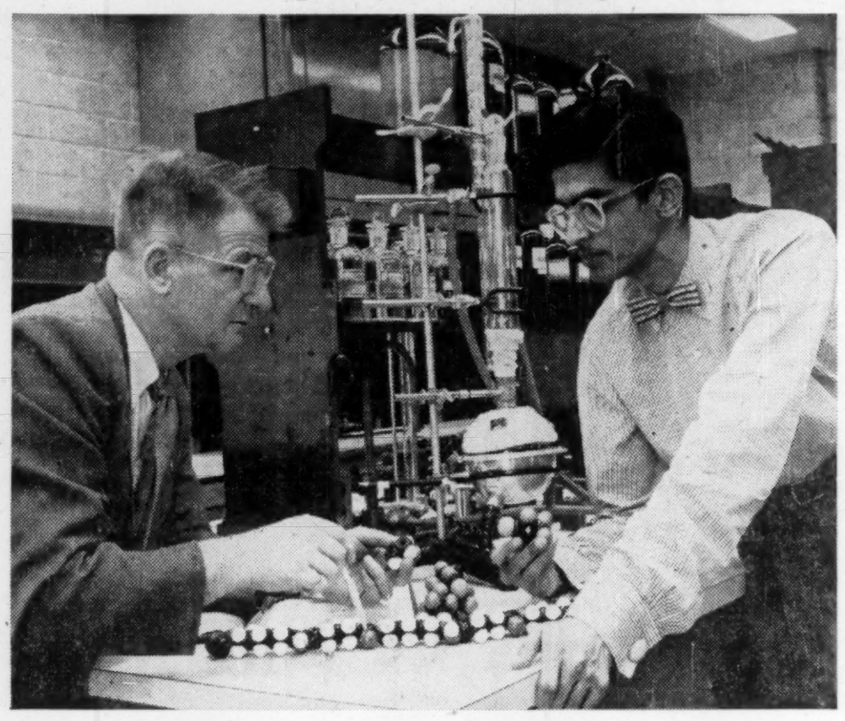
In both of these laboratories commercial equipment has been installed so that polythene resins can be put through substantially all the processing operations normally carried out by our customers. Over $2 million has been invested at our "Terylene" plant in research and development facilities.

Similarly there are research and development laboratories for explosives, ammunition and coated fabrics, all devoted to the improvement of existing products and processes, and developing new ones.

C-I-L has full access to the technical knowledge of Imperial Chemical Industries Ltd. of England and both technical and commercial support is available to us in bringing new products and new technology to Canada.

To facilitate and promote this flow of information, we recently sent one of our senior research men to England to take up residence as our technical representative.

His major job will be to ensure that current ICI technical developments are brought to the attention of the appropriate units in C-I-L ICI employs some 6,500 persons on research and development at a cost in 1954 of greater than $20 million.



RESEARCH IS FAST becoming an all-important "must" to chemical firms that wish to keep in the forefront of market development. All the major chemical companies in this country are boosting their research dollar expenditures. The molecular models above are used in the big new Du Pont of Canada research centre at Kingston, Ont., in research studies on long-chain molecules called polymers.

Shawinigan Chemicals

Shawinigan Chemicals has chalked up one of the finest records in the Canadian chemical industry for fundamental research.

Company's basic research led to development of vinyl emulsion paints in which field Shawinigan was also a pioneer, building the first plant in North America at Anaheim, Cal. This research also led to the development of Butvar, the interlayer used in all safety glass.

Acetylene black was also discovered by Shawinigan research men and the company is still the only producer by that process in the world. The U. S. and European countries are supplied from Shawinigan Falls.

In the mid-1930s Shawinigan Chemicals developed a process for oxydizing acetaldehyde to produce first peracetic acid and then acetic anhydride. Basic patents obtained by SCL on this process were licensed to nearly all major manufacturers of these materials in the U. S. and elsewhere, and SCL provided engineering advice and know-how for construction of a number of foreign plants.

Shawinigan's research and development group now consists of two laboratories devoted to basic research, one operating in the field of organic chemicals and polymers and the other in the electrochemical and electrometallurgical field.

These two labs are supplemented by a laboratory and pilot plant department which deals with manufacturing problems and carries basic research into semi-plant production. In all, the company has some 60 technical graduates in its various research labs at Shawinigan Falls.

Within the past year basic patents have been filed by the company in two completely new fields of chemical endeavor which may prove to be of equal importance to the discoveries already outlined.

Canadian Chemical Co.

With the appointment of Dr. Paul E. Gishler as manager of research and development at Edmonton, a start was made during 1955 on the organization of research activities in the petrochemical field. Dr. Gishler, formerly head of the Chemical Engineering Section of the National Research Laboratories in Ottawa, will direct investigations of an applied character. His laboratory at Edmonton is now in operation and staff is being assembled.

The more fundamental programs are at present being carried on at Saskatoon under the direction of Dr. Thorbergur Thorvaldson, recently retired Dean of Graduate Studies at the University of Saskatchewan and a distinguished research chemist.

A competent control and special problem laboratory has been in operation since plant operation started. This program for active work in the fields of Fundamental and Applied Research and Development rounds out our scientific activities.

At Prince Rupert, the research and development laboratories and pilot plant facilities have been enlarged and additions made to the staff. These laboratories, under the direction of Dr. Morris Wayman, are becoming increasingly active and effective in the solution of applied problems of immediate interest to plant operations and in the planning of future developments.

At St. Johns (St. Jean), Quebec, plant and warehouse facilities are under construction with completion planned for the later part of the year. The new plant will contain both textile and chemical application laboratories which are designed primarily for customer service operations.

Application of products in various end-uses will be investigated, particularly new products as they become available from the plant at Edmonton. The laboratories are designed to allow for the addition of facilities when new products or new applications dictate that the scope of studies be increased.

The St. Johns plant will also provide twisting and beaming facilities for the company's yarn and staple fibre products.

Union Carbide Canada

Each of the operating divisions of Union Carbide Canada is responsible for the industrial research and development work in its own field. This includes the following operating divisions:

Alloys and Metals — Electro Metallurgical Co., Welland, Ont. and Beauharnois, Que.

Carbon and Graphite — National Carbon Co., Toronto, Welland and Walkerton, Ont.

Chemicals — Carbide Chemicals Co., Montreal.

Industrial Gases — Linde Air Products Co., Toronto, Montreal and in 15 other centres across Canada.

Plastics — Bakelite Co., Belleville, Ont.

In each of the companies the research work is headed by senior people who report directly to the company management. Facilities for carrying on experimental work in this program are provided in the plant laboratories of the various companies.

One of the functions of the development people is to maintain liaison with the research and development activities of Union Carbide's associates in the U. S., who spent more than $43 million on research in 1955.

Another important aspect of the program is in field of market research. In this, the researchers also work closely with sales, and with production people in ensuring the optimum utilization of plant and equipment. For example, Electro Metallurgical Co. in Welland is conducting market studies on titanium sponge to consider the desirability of the company entering the production of this metal if conditions warrant.

As Union Carbide is basically a supplier of materials for industry, much of the work of the development departments consists in working in co-operation with the company's customers.

A few examples of this kind of customer development work follows:

The Linde Air Products people worked on a joint research project with Atlas Steels Ltd. and developed an automatic powder scarfing machine for hot scarfing stainless steels. Up till then, stainless steels could not be desurfaced in the usual manner using the oxy-acetylene flame because of their inherent heat-resisting properties.

The design of the gigantic electric furnaces for the processing of the titanium-bearing ores for Quebec Iron & Titanium's smelter at Sorel, Quebec, specified 2 ft. diameter graphite electrodes weighing one ton each. Such massive graphite electrodes had not been used anywhere in the world previously and necessitated considerable development work at the Welland, Ont. electrode plant.

National Carbon's engineers also developed an iron-free graphite electrode for use in International Nickel's electric furnace process for melting refined copper. Previously, graphite electrodes had purposely contained iron compounds and to produce an iron-free electrode was a major development accomplishment. This particular copper melting process has now been adopted by the major copper refiners throughout the world.

National Carbon Co. in Toronto developed a 1,600-volt dry battery weighing only 5 lb. This battery was designed for a customer in Western Canada for use in airborne scintillometers for detecting radioactive ore bodies. In this case, one of the aspects of the development included the devising of a safe procedure for manufacturing and handling this lethal power pack. Scintillometers using this battery are now in use for uranium prospecting in many countries.

Among the current collaborative research and development program of Carbide Chemicals Co. in Montreal, is included: new chemicals to improve wet strength of paper, and to increase the tensile and abrasive strength of rayon.

The research and development group of Bakelite Co. in Belleville, Ont., worked closely with various manufacturers in increasing by 100% the tensile strength of hardboard using "Bakelite" phenolic resins. These resins have found wide acceptance and large volume usage in this product.

In addition to the development work carried out in co-operation with its customers on specific problems, Union Carbide's research and development also includes what might be termed new products.

A rather spectacular example of this was the development in Toronto by National Carbon of a revolutionary new flashlight battery design incorporating a thermoplastic principle to provide leakproofness without sacrificing power.

This battery was adopted by National Carbon's associate in the U. S., the battery being on the Canadian market a full year prior to its introduction in the U. S.

Dow Chemical of Can.

Construction of a new half million dollar laboratory is now complete at the Dow plant in Sarnia. The 15,000 square feet of floor space which the new premises provides will have mutual facilities for fundamental research and control.

In 1953, Dow set up a department responsible for technical service and development on all Dow products. The department is staffed by thoroughly trained engineers.

Responsibilities of Dow technical service and development include the diagnosis of customer problems in co-ordination with the activities of the sales department and other divisions of the company.

An interesting example of the type of service performed by Dow research and development is project RC 17. This project involves the evaluation of several wooded areas in Canada in an effort to control timber stands. The Government, the pulp and paper industry and Dow are working together on this project.

In the pulp and paper industry, development work includes assistance on the handling of caustic and chlorine and advice on the use of ammonia in the pulping process.

With natural gas in the news so much these days, it will be of interest to note that Dow invites western gas companies to submit samples of their lean solutions for analysis.

It is not an uncommon sight in the dry cleaning industry to see a Dow technical service man checking synthetic dry cleaning equipment with a Halide meter to ensure economical operation.

Toronto Iron's modern day spinning wheel...

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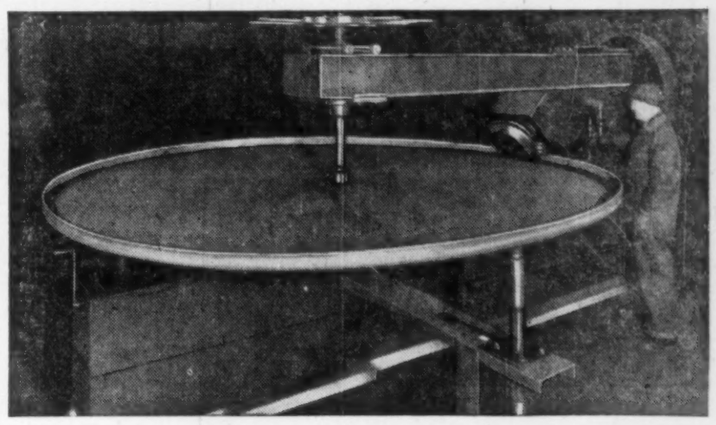
The "spinner" shown below is just one of the many precision tools in use daily at Toronto Iron Works. Full use is made of every modern facility, under rigid supervision, to ensure that your job is 100% accurate ... and erected on time. If you want a job well done ... give it to Toronto Iron.



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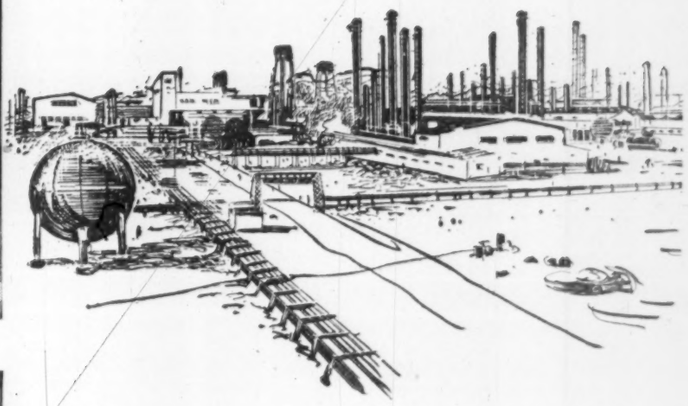
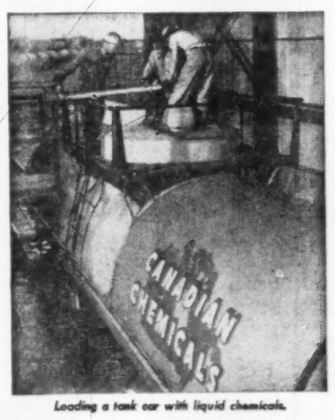


Box-loading cellulose acetate flake.



Loading a tank car with liquid chemicals.

PROCESSING the hydrocarbons found in Alberta's generous bounty of petroleum resources to form industrially-useful organic chemicals — converting pulp from the trees of British Columbia's forests into cellulose acetate flake, yarn and staple fibre — these are ways in which the 200-acre Edmonton plant of Canadian Chemical Company, Limited is helping to develop nature's resources, creating new wealth for Canada.

CANADIAN CHEMICAL COMPANY, LIMITED

An Affiliate of Canadian Chemical & Cellulose Company, Ltd

Montreal – Toronto – Vancouver

Plant – Edmonton, Alta.

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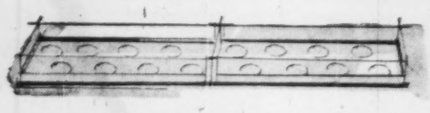
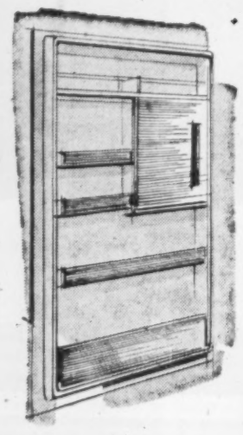
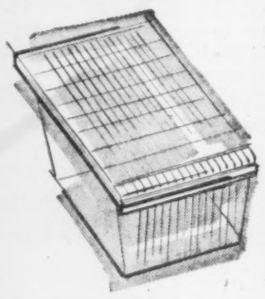


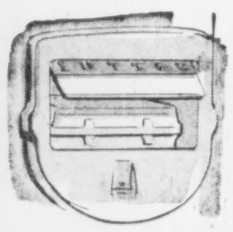
Styron egg trays are lightweight, easy to handle . . . reduce breakage.



Styron inner door panels . . . won't chip, peel or rust in constant use.



Styron vegetable drawers are both attractive and functional . . . easy to clean.



Styron butter conditioners ensure proper insulation to keep butter easy to spread.

Styron...*plastic key to modern design, beauty and performance*

Fresh colour . . . smooth, bright beauty . . . superior insulating qualities . . . and countless manufacturing and homemaking advantages are inherent in this famous Dow plastic. Good reasons why designers and manufacturers are turning to Styron — Dow polystyrene — for basic parts in the finest new refrigerators!

More usable space

Because Styron is a plastic and easily shaped, its design possibilities are virtually unlimited. Utilization of the mouldability and insulating qualities of Styron made possible the inner door shelves, a big selling feature of today's refrigerators. Styron puts more usable space in the same cubic footage.

More value . . . less cost

The ease of fabrication and proven performance of Styron provide greater value at less cost in many of the modern refrigerator's basic parts . . . back panels, crisper trays, drip pans, breaker strips, freezer compartment doors, butter keeper doors, shelves and escutcheons.

Versatile plastic

Intensive research and development at Dow have made available a wide range of Styron formulations, each tailored to meet specific market needs. Radio, television, refrigerator and business machine components . . . housewares, wall tile, novelties and packaging . . . all take on functional new beauty and saleability when they're made of Styron.

To help you turn out the best possible product and do it profitably, Dow Technical Service and Development is at your disposal. It will pay you to put Dow experience and leadership in plastics to work for you. Write to DOW CHEMICAL OF CANADA, LIMITED, 600 University Avenue, Toronto 2, Ontario.

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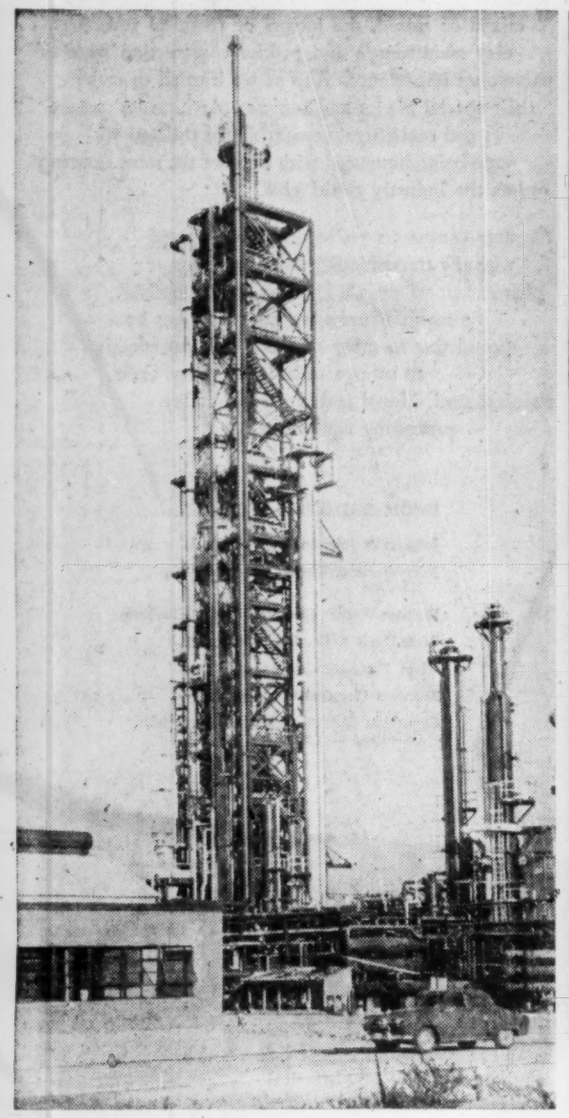
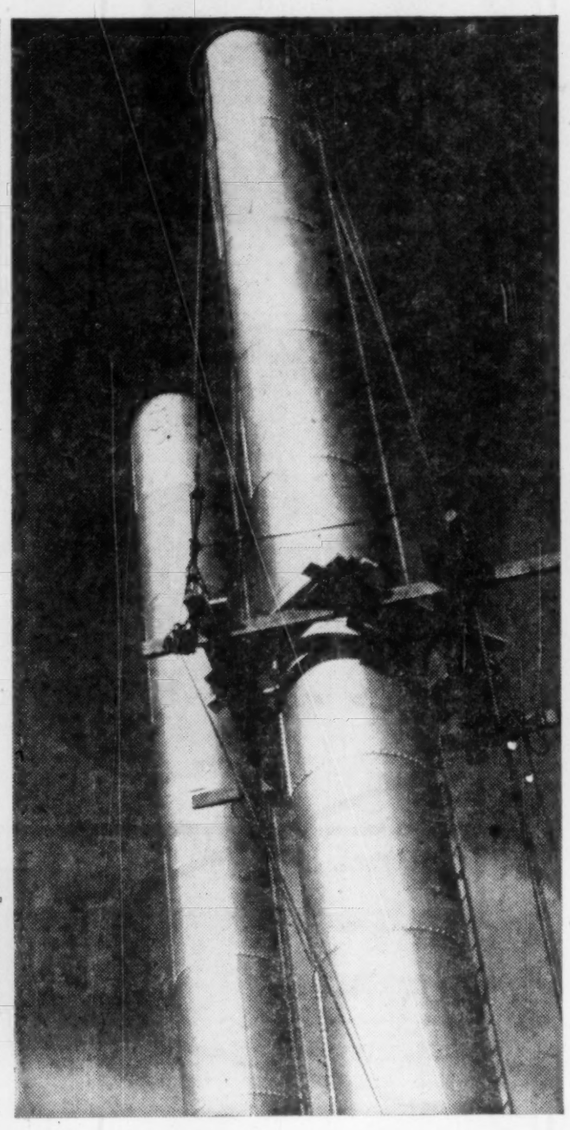
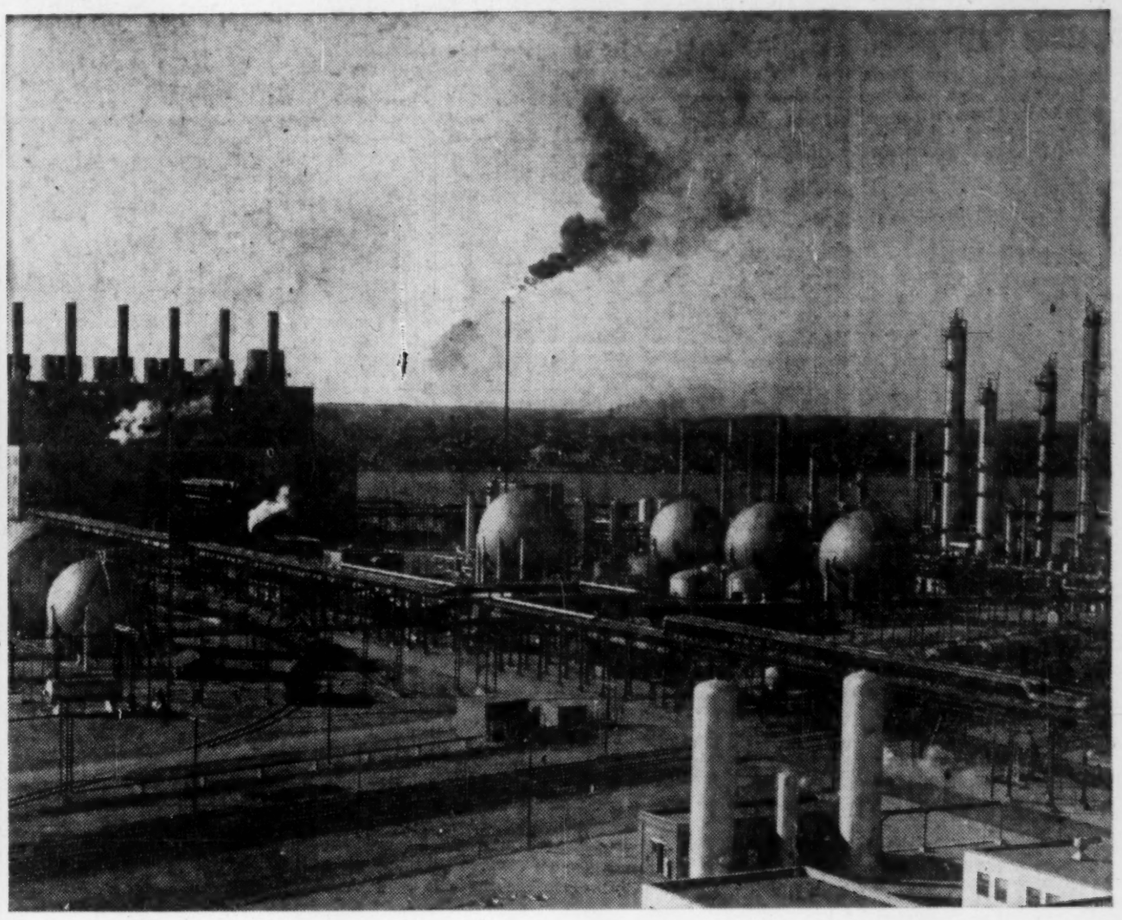
Chemical Industry's Odd Towers Give Canada New Skyline

...A Pattern of Weird Steel Stalks and Spheres







Here's Why The Towers Are Mushrooming

For the first time, in 1955, production from Canada's fast-moving chemical industry zoomed over the $1-billion level ($1,050,000,000). This represented a gain of 12% over previous year. Nearly every industry within the broad chemical groups participated in the general rise reflecting the quickening economic tempo in the country.

The fast-moving plastics resins producers—a major part of the buoyant petrochemical industry—led the field with a gain of 28.2% over 1954. Heavy chemicals (sulphuric acid, chlorine, caustic soda, etc.), closely allied with Canadian natural resources development, followed with a 23.5% increase.

Some 1,112 operating establishments, employing 51,463 persons paid out $184.4 million in salaries and wages. Chemical producers in all segments of the industry indicated their intention to spend $165 million during 1956 for new equipment and plant. This is about 2½ times the total spent in 1955. Actually expansion under way or planned will go close to $200 million.

IR CANADA

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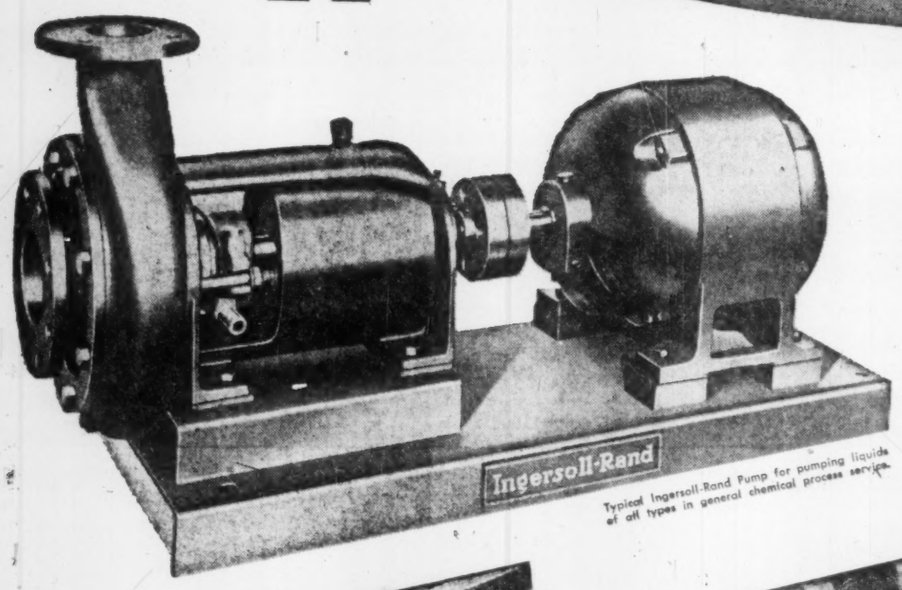

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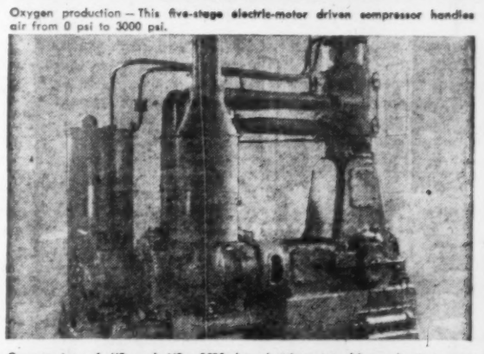
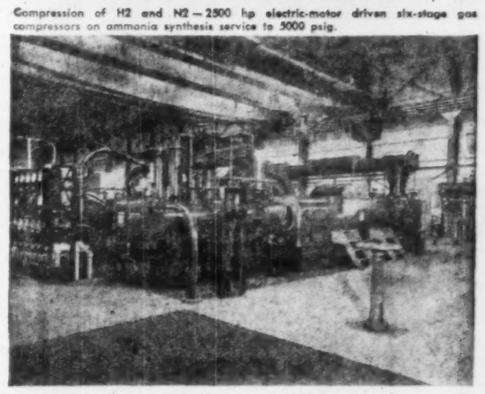
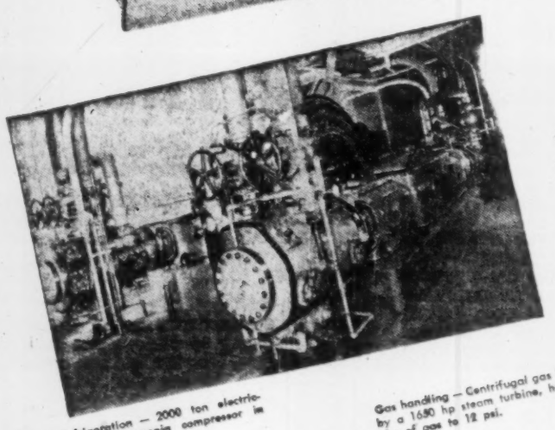
Synthetic ammonia — 12,800 hp total — five I-R six-stage synchronous motor driven compressors handling nitrogen and hydrogen to 5000 psi.

Oxygen production — This five-stage electric-motor driven compressor handles air from 0 psi to 3000 psi.



Compression of H2 and N2 — 2500 hp electric-motor driven six-stage gas compressors on ammonia synthesis service to 5000 psig.





Ammonia Refrigeration — 2000 ton electric-driven heavy-duty ammonia compressor in brewery service.

Gas handling — Centrifugal gas blower, driven by a 1,650 hp steam turbine, handling 27,900 cfm of gas to 12 psi.

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Ammonia: A Modern Old-Timer

New Methods Spark Output

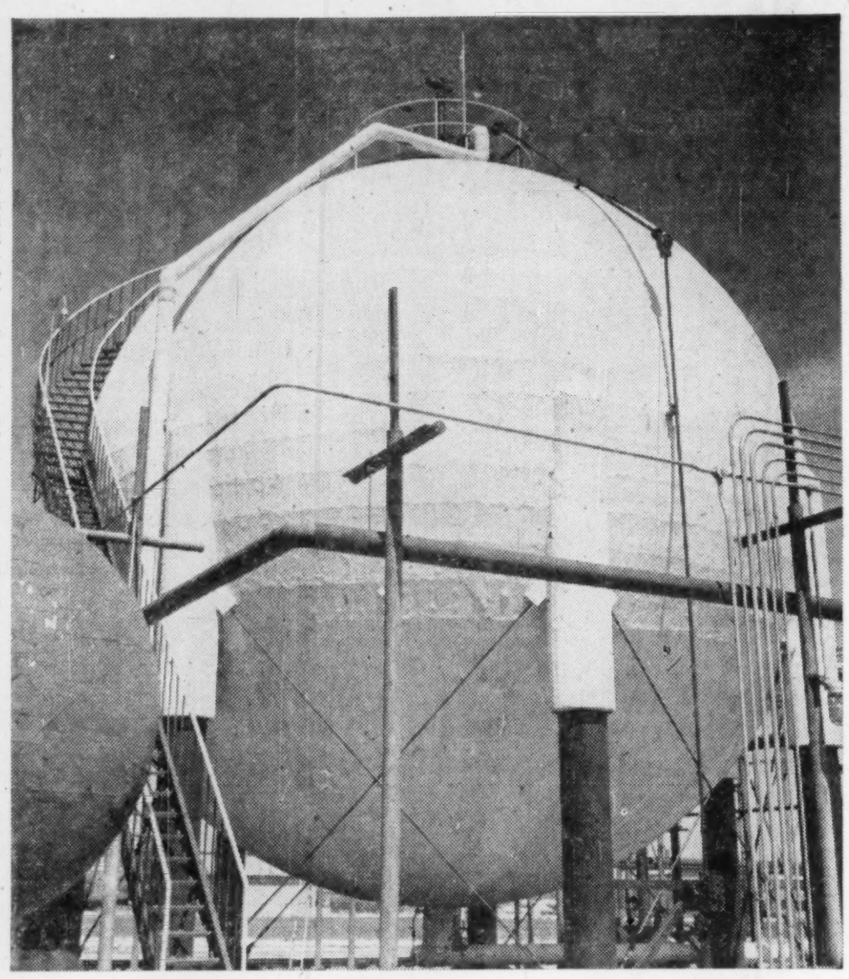
Nitrogen compounds constitute one of the most important groups of materials used in the chemical process industries. Most of the important nitrogen compounds are now derived from synthetic ammonia, so that in reviewing the ammonia picture one is really looking at the keystone of the nitrogen family of industrial chemicals.

Nitrogen itself, which forms about 80% of the atmosphere, is of little importance as an industrial chemical, but as so-called "fixed" nitrogen its compounds with other elements are used in the manufacture of such large-volume end products as fertilizers, explosives, plastics, synthetic fibres, uranium, nickel, cracking catalysts, paper and refrigerants.

Prior to the First World War, the supply of fixed nitrogen in usable forms was limited mainly to natural sources such as the deposits of guano in Chile and the small amounts of by-product ammonia produced in the distillation of coal. Some nitric acid was being made by the electric arc process and a few plants for the manufacture of calcium cynamide had been built, but these methods of fixing nitrogen were not entirely satisfactory.

Better methods were being sought, especially in Germany which would be cut off from guano imports in the event of war. There, Haber and his associates succeeded in developing a catalytic process for combining nitrogen and hydrogen under high pressure to form ammonia, and the first commercial plant using the Haber process came into operation in 1913. Other synthetic ammonia plants followed and made Germany independent of imports of nitrogen compounds for the manufacture of explosives.

At the end of the war Germany had a well-developed synthetic ammonia industry, but as late as 1921 there was only one synthetic ammonia plant operating in North America. This was at Syracuse, N.Y. The construction of several large plants in the United States was undertaken soon after this date and in 1930 the first Canadian synthetic ammonia plant was built by Canadian Industries Ltd. at Windsor, Ont. Canada's second plant was built in 1931 by The Consolidated Mining & Smelting Co. of Canada at Trail, B.C.



WITH THE TREMENDOUS EXPANSION in ammonia production in Canada and U. S. the Horton sphere above — used for storage — is becoming a familiar sight. Four Canadian companies have recently expanded their ammonia-making facilities and three more have plants in construction or the planning stages. One of the most promising new market outlets is in straight application of anhydrous ammonia to soil as a fertilizer. But it is also going into a variety of fertilizer formulations, into refrigerants, for use in pulp and paper processing, etc.

Still Growing

The history of the ammonia industry is one of continuous growth, with the greatest period of expansion occurring during and since the Second World War.

The world use of ammonia has more than doubled since 1947 when 3.2 million tons were consumed. In the U. S. ammonia production has increased almost as rapidly from 1.67 million tons in 1947 to 2.95 million tons in 1954. At present there is a surplus of production capacity in the United States amounting to about 370,000 tons per year. This surplus is expected to increase to 480,000 tons per year by 1958 as proposed new plants come into operation, but it will be taken up by 1960 if the market continues to grow at the forecast rate.

Canadian production and consumption figures since 1939 show a sharp increase in ammonia usage since about 1947.

While statistics are not available for the years prior to 1939, the history of ammonia production in Canada goes back to 1887 when The Michigan Ammonia Works was built in Toronto to recover several hundred tons per year of anhydrous ammonia from the crude ammonia liquor resulting from the coal-gas operations of The Consumers' Gas Co. of Toronto. This operation was incorporated as Canadian Ammonia Co. in 1912 and a new plant was built in 1913. C-I-L took over the company in 1928 and operated the plant until 1949 by which time it could no longer compete with newer methods of making ammonia.

Byproduct ammonia from coal-gas and coke manufacture may also be recovered by absorption in sulphuric acid to form ammonium sulphate. The first Canadian plant to do this was installed at Sydney, N.S., in 1901 and the Canadian production of byproduct ammonium sulphate, mainly by steel companies and gas utilities, has grown steadily until it now represents over 10,000 tons of ammonia per year. This is used mainly as a fertilizer.

At Niagara Falls

The first commercial fixation of atmospheric nitrogen in Canada occurred with the operation of the cyanamide process at the Niagara Falls plant of American Cyanamid Co. in 1909. From the outset, most of the calcium cyanamide made at this plant has been exported to the United States where, during World War I, part of it was converted to ammonia. However the advent of low-cost synthetic ammonia rendered calcium cyanamide obsolete as a source of ammonia, and it is now used as a fertilizer and in the manufacture of melamine plastics and flashless cordite.

As previously mentioned, the first production of synthetic ammonia in Canada was in 1930 at the C-I-L plant in Windsor. Hydrogen obtained from the caustic soda-chlorine cells was at first combined with nitrogen obtained by burning part of the hydrogen in air. Later the nitrogen was made by the fractional distillation of air. The ammonia synthesis was carried out by the Casale process, one of several modifications of the Haber process which were developed after the First World War.

The hydrogen and nitrogen are compressed, mixed with recycle gas and passed through the convertor. This is a high-pressure vessel containing the catalyst and provided with means of controlling the temperature. A part of the gas mixture is converted to ammonia which is separated in the condenser and drawn off as a liquid product. A small amount of the unreacted gas is purged to keep down the concentration of impurities, and the remainder is recycled. The various conversion systems used, such as the Haber, Casale, Claude, N.E.C., Fauser, Kellog, etc., are basically similar and differ mainly in the pressures at which they operate and in details of converter design.

The output of the Windsor plant augmented the supplies of anhydrous ammonia recovered at the Toronto plant to fill the needs of the Eastern Canadian market, largely for dynamite manufacture and refrigeration uses. In 1954 the operations at Windsor had to be discontinued because of soil subsidence under the plant.

The larger plant built in 1931 by C.M. & S. at Trail obtained its hydrogen by the electrolysis of water. All of the output of this plant went into the manufacture of fertilizers, mainly for export but also to supply the growing requirements of Canada's western agriculture.

No more ammonia plants were built in Canada until the beginning of the Second World War. At that time most of Great Britain's capacity to manufacture ammonia was concentrated in the Billingham plant of Imperial Chemical Industries Ltd., within enemy bombing range. To create a reserve supply of fixed nitrogen, four ammonia and ammonium nitrate projects were commenced in the spring of 1940 under the direction of the Canadian Government.

The existing C.M. & S. plant at Trail was expanded and a new one based on coke was built at an adjacent site. These were operated for the Government by C.M. & S. Another plant based on coke, the largest of the program, was erected at Port Robinson, Ont., and operated as Welland Chemical Works by North American Cyanamid. The fourth project consisted of a plant at Calgary using natural gas as raw material in a new process which had been developed in England by ICI. Alberta Nitrogen Products Ltd., as the plant was called, was built by C.M. & S. and C-I-L, operated by C.M. & S.

Different Processes

Hydrogen made by electrolysis, although the basis of the only synthetic ammonia made in Canada before the Second World War, is an economic starting material only in circumstances where it is available as a byproduct from other operations or where power is very inexpensive.

Prior to 1940 most of the synthetic ammonia made on this continent and in Europe was made from hydrogen prepared by the action of steam on hot coke. This "water-gas" reaction gives a mixture of hydrogen and carbon monoxide. The carbon monoxide is reacted over a catalyst with more steam to produce carbon dioxide and additional hydrogen. Then the carbon dioxide and other impurities must be scrubbed out

(Continued on page 63)

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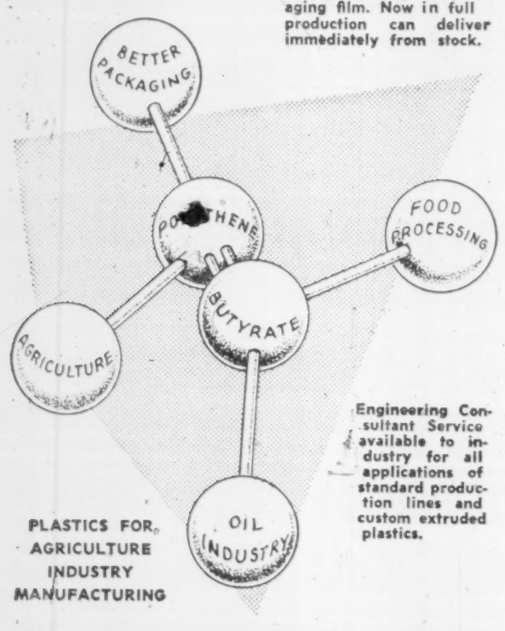

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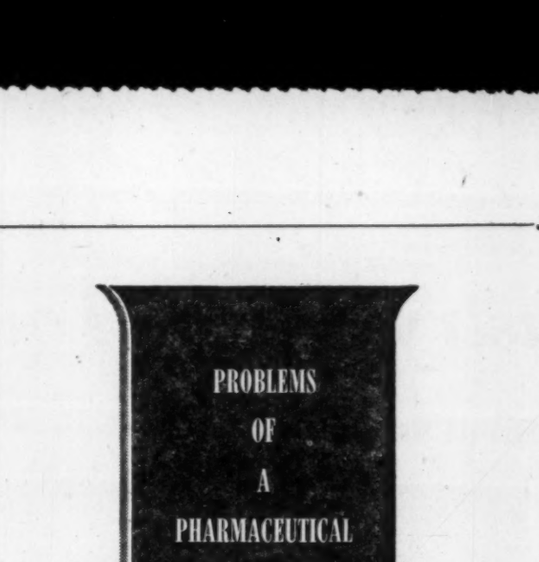

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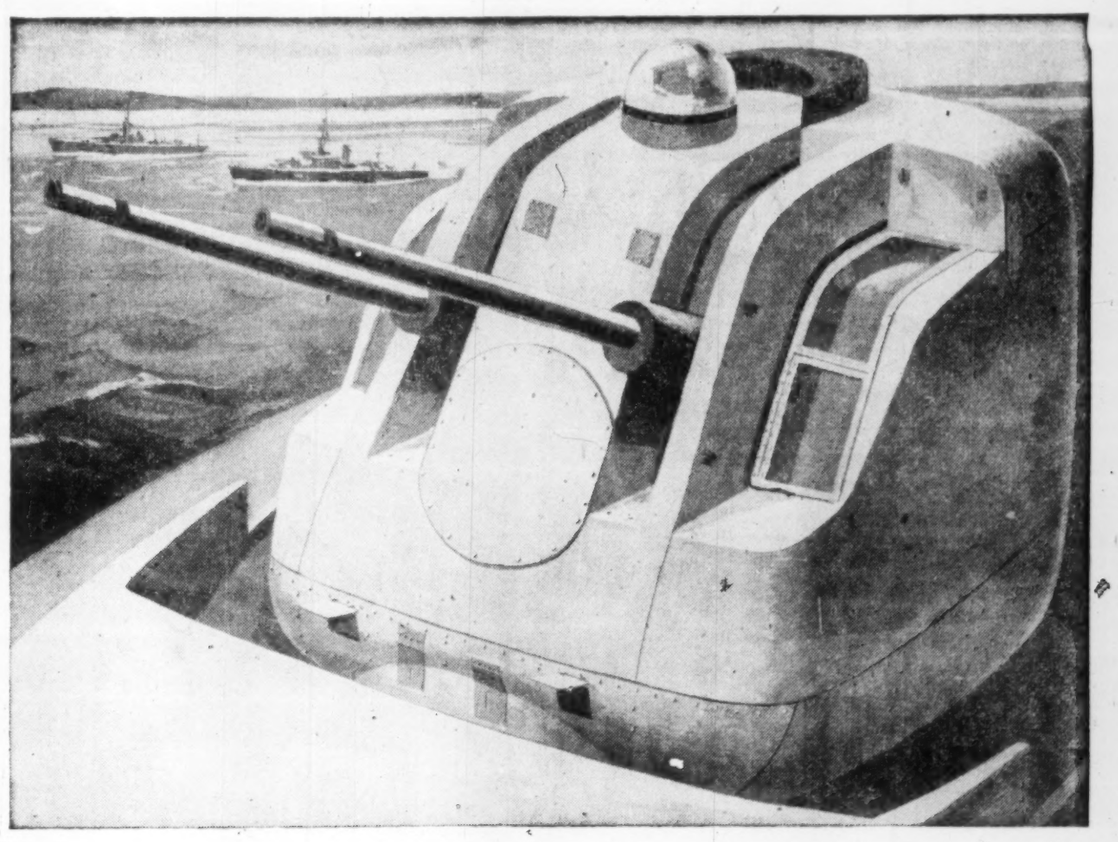

Vibrin JOINS THE NAVY

IN THE PAST FEW YEARS the Royal Canadian Navy has pioneered many new developments. One of the most interesting is the gun shield for the 3"/50 mount, shown above, made of reinforced Vibrin.

Vibrin, Naugatuck's polyester resin, offers several advantages in this application. Its strength—when reinforced with fibrous glass—is many times greater than that of steel on a weight basis, so the gun shield and mount can combine light weight with greater resistance to shrapnel and shell penetration. Reinforced Vibrin is also completely immune to corrosion from salt water.

Another advantage of reinforced Vibrin is the ease with which difficult parts can be molded. Original molds are simple and economical to make, and no heat or pressure are required in molding.

All these advantages have caused Vibrin to be used in many other applications besides naval gun shields and mounts. Car and truck bodies, machine housings, boats, chemical piping, and translucent sheeting are just a few.

Vibrin may be the material you need to improve your present products, to cut manufacturing costs, or to give reality to ideas which might otherwise be impracticable. Why not find out, by calling Naugatuck Chemicals in Elmira, Ontario, or branches shown below?

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New Processes Spur Ammonia Production For Many Fields

(Continued from page 62)

of the gas mixture to give the high-purity hydrogen required to make ammonia. The necessary nitrogen is obtained either by distillation of liquid air or by passing air over coke or coal so that the oxygen is removed.

The mixture of hydrogen and carbon monoxide leaving the water-gas generator is mixed with steam and passed through the CO converter where a catalyst causes the "shift" reaction to take place:

$$H_2O + CO \rightarrow H_2 + CO_2$$

The next step is the removal of carbon dioxide which is absorbed in an ethanolamine or potassium carbonate solution; or in water under pressure. Final gas purification is usually carried out by scrubbing with ammoniacal copper formate solution or liquid nitrogen. The nitrogen for the synthesis gas mixture may come from liquid air distillation, but another common method is to mix producer gas (largely nitrogen and carbon monoxide) with the water gas.

The flow sheet of the natural gas process used at Calgary is somewhat similar. Steam and natural gas are reacted by passing the mixture over a heated catalyst in what is called a "reformer," giving a mixture of hydrogen and carbon monoxide. Nitrogen is normally added by introducing air and passing the mixture through a second reformer where the oxygen is removed by partial combustion. The subsequent steps of reacting the carbon monoxide with steam to produce more hydrogen and purifying the gas are similar to those used when starting from coke.

This use of natural gas instead of coke was a major step forward in the technology of ammonia manufacture. Its advantages lie in the much lower capital investment required and in the low price of the raw material. Since this pioneer plant at Calgary was built, most of the new ammonia capacity in the United States has been based on the steam reforming of natural gas. Only in the last few years have newer processes been introduced which have advantages over steam reforming in some circumstances.

Turn to Fertilizers

To return to the historical review of ammonia production in Canada, it turned out that none of the Canadian wartime plants was used extensively for the purpose for which it was built. Fortunately the Billingham plant in England was never seriously damaged and the Canadian production was not required overseas. Some of it went into Canadian-made munitions, and for a period of two years a good deal of it was used to supply United States war requirements. However by the spring of 1943 American ammonia production had caught up with demand and the excess Canadian production was diverted to the manufacture of fertilizers.

After the war the western plants were purchased from the Government by C.M. & S. and Welland Chemical Works was bought by North American Cyanamid. Since 1946 the wartime plants have been operating at or near capacity largely as fertilizer plants making ammonium nitrate, most of which has been exported. The output of the North American Cyanamid plant has been used in part for defense purposes.

The only postwar ammonia plant built in Eastern Canada to date is the plant of Dow Chemical of Canada Ltd. at Sarnia which was completed as a rather small unit in 1950 using byproduct hydrogen from caustic soda-chlorine cells. This plant has just been considerably enlarged to use hydrogen obtained as a byproduct in the manufacture of ethylene and in oil refinery operations. This source of hydrogen involves special purification procedures but otherwise introduces no new features in ammonia manufacturing.

Since the war the Eastern Canadian demand has been supplied by the Windsor and Sarnia plants, by ammonia shipped from Calgary and, more recently, by some imports from the United States. The postwar increase in the Canadian consumption of ammonia, particularly in the East, has been as rapid as elsewhere in the world and until recently has been due largely to the steadily expanding requirements for explosives and fertilizers. The rate of growth has increased sharply in the last few years with the development of several new outlets for ammonia, and these new factors are expected to cause the upward trend to continue. The new market developments will be described before outlining the steps being taken to increase Canada's ammonia manufacturing capacity.

Ammonia for Nylon

In 1953 the production of nylon intermediates was commenced at Maitland, Ont., and these operations of Du Pont Co. of Canada now use several thousands tons of ammonia per year. Another large consumer will be the plant being built by Davison Chemical Co. at Valleyfield, Que., for the production of synthetic aluminum silicate catalysts used to make high-octane gasoline by the various cracking processes now in use at most oil refineries.

Together with plants being built to make ethanolamines and certain resin intermediates, these new uses of ammonia to make other chemicals are important factors in the growth of the market. However the most important new outlets for ammonia are not strictly in the chemical industry but in the closely related fields of metallurgy and pulp manufacture.

In the metallurgical field a new ammonia leaching process for the extraction and recovery of base metals was recently discovered by Prof. Forward of the University of British Columbia and developed by Sherritt Gordon Mines and Chemical Construction Corp. This process has found its first full-scale application in the new Sherritt Gordon nickel refinery at Fort Saskatchewan, Alta.

The ammonia used to treat the ore concentrates ends up as ammonium sulphate, and the sale of this byproduct is important in establishing the economics of the process. The leaching method is reported to be suitable for use with a number of Eastern Canadian ores, but the limited market for ammonium sulphate in the East is a stumbling block to the adoption of the process. While it is difficult to forecast how extensively ammonia leaching will replace conventional smelting methods, even a few applications would have very large requirements for ammonia. Probably the outlook is best for metal refineries located at tide water and able to ship economically to export markets.

Other metallurgical operations which will consume appreciable quantities of ammonia are a new process being installed by The International Nickel Co. of Canada to recover nickel from pyrrhotite, and the treatment of uranium concentrates which requires nitric acid made from ammonia.

New developments in the manufacture of sulphite pulp are expected to bring the largest increase in the demand for ammonia in Eastern Canada. The advantages to be gained by using anhydrous ammonia instead of limestone in the sulphite process are being evaluated carefully by pulp manufacturers, and four Canadian mills have already made the change to ammonia.

Among the more important advantages are the elimination of the waste liquor disposal problem; improved uniformity resulting in a higher-test paper; more economical operation due to ease of handling, better process control, absence of scaling and higher output per digester; and the ability to use jackpine and hardwoods which cannot be satisfactorily cooked with calcium-base liquors.

There are more than 40 sulphite mills in Eastern Canada, representing a potential market for at least 100,000 tons per year of ammonia. Many of the mills are so situated that the use of ammonia is not attractive to them at present prices, but it is forecast that by 1965 over a third of the mills will have converted to ammonia. This will make the pulp industry the largest industrial outlet for anhydrous ammonia in Eastern Canada.

A consideration of the non-industrial or fertilizer uses of ammonia will complete the market review. Canadian farmers do not generally practice the intensive farming methods used

(Continued on page 64)

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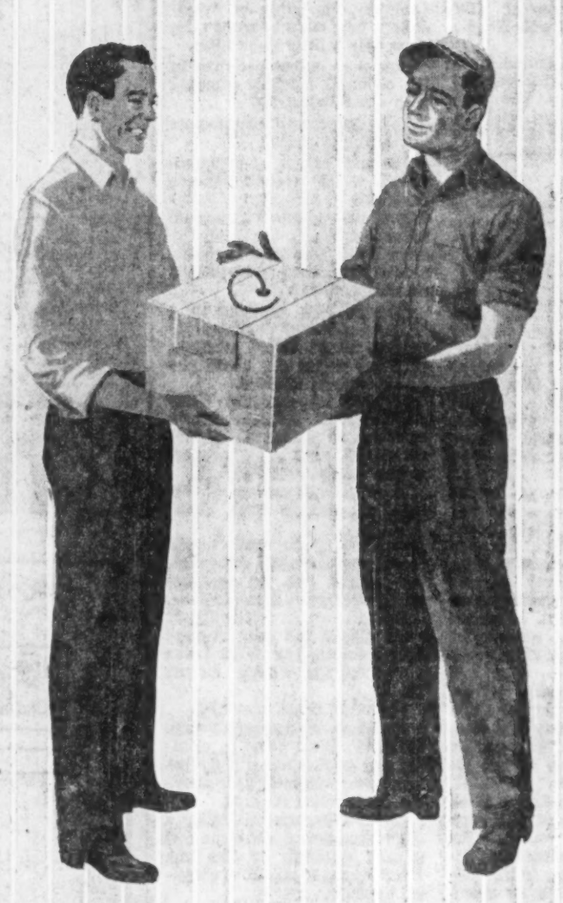

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How Chemical Workers Are Faring

	Number of plants		Salaries and Wages		Income per worker		Production per worker†	
	1951	1954	1951	1954	1951	1954	1951	1954
			($ 000's)		$	$	$	$
Coal tar distillation	11	11	1,443	1,856	3,100	3,600	25,000	25,000
Heavy chemicals	29	43	24,579	33,243	3,300	4,000	16,000	17,000
Compressed gases	51	46	3,681	4,159	3,000	3,400	12,000	13,000
Fertilizers	39	39	10,310	11,619	3,200	3,800	23,000	26,000
Medicinals, pharmaceuticals	206	209	18,918	22,555	2,500	3,100	12,000	13,000
Paints, varnishes	114	124	16,129	19,291	2,800	3,400	18,000	19,000
Soaps, washing compounds	130	136	11,506	13,563	3,100	3,600	20,000	24,000
Toilet preparations	97	92	3,775	4,887	2,100	2,400	12,500	16,000
Inks	34	33	2,452	3,113	3,000	3,200	13,000	13,500
Vegetable oils	13	12	2,317	2,368	3,100	3,500	80,000	70,000
Adhesives	29	28	1,972	1,957	2,800	3,200	16,000	21,000
Polishes, dressings	49	51	1,853	2,615	2,300	3,000	16,500	21,000
Primary plastics	16	21	5,403	10,002	3,300	3,900	24,000	19,000
Miscellaneous*	219	250	26,972	43,647	2,800	3,300	13,500	15,000
	1,037	1,095	131,310	174,875	2,900	3,400	17,000	18,000

*Including explosives, hardwood distillation, insecticides, matches, dry colors, etc.
† In the case of 1951, this is a ratio of gross selling value at works to average number of employees; in 1954, value of factory shipments (a slightly different figure) to number of employees. The ratios do not indicate worker productivity, but total dollar value (including that resulting from management and capital) per worker. They include raw material costs as well.

Chemical Wages Show Wealth

Big Contract Settlements Point To Industry Growth

It's a gold rush for chemical unions.

During the winter bargaining season just over, unions in chemicals won some of the fattest settlements recorded by Canadian Labor.

The general pattern was one of wage increases of 10c-15c per hour. Meanwhile, the over-all Canadian pattern has been 6c-12c.

The bigger chemical settlements are a reflection of the apparent bright future of the industry. It's one of the fastest-growing in the country.

Summer is the slack season in collective bargaining. But, in the few contracts being negotiated — the largest: Dow in Sarnia and Du Pont near Brockville—unions are intent on preserving the big increase pattern.

Then, next fall and winter, they can shoot for more.

Probably around 40%-45% of Canada's chemical workers are organized. That percentage explains why most unions in the field are working hard on sign-up campaigns — and with fair success.

These are the major Canadian chemical unions:

• **International Chemical Workers:** about 12,500 members, the great majority in chemicals. It's a former AFL-TLC union, has few strikes, hits the headlines rarely, wins good settlements. Shrewdly, it concentrates on winning wage increases, doesn't put a dollar tag on fringe benefits, obviously feeling some unions are settling for fringe benefits when they could win bigger wage boosts.

• **Oil, Chemical and Atomic Workers:** A more militant, smaller union (claims almost 10,000 Canadian members). It's the product of merger of Oil Workers International and Gas, Coke and Chemical Workers, both former CIO unions.

A minority of OCAW members are in chemicals, the larger group being in oil refineries.

• **United Mine Workers:** This is an independent union since pulling out of Canada's new merged labor group, the Canadian Labor Congress. It's a big union, but most members are in mining; probably 2,500 members in chemicals or allied industries. It's been masterminding a wildcat strike at CIL's Nobel, Ont., explosives plant. Reason given for the walkout is company refusal to kick in with a 15c hr. wage boost. But, it's suspected, the strike is a stratagem to solidify worker loyalty in the face of raids by OCAWU. So far, this strategy seems to be successful but it could backfire if UMW fails to win a good-sized increase.

• **National Federation of Chemical Workers:** This is a Catholic Syndicate, affiliated with the Canadian and Catholic Confederation of Labor. Its members (about 3,000) are in Quebec, mainly in the Shawinigan Falls area.

• **Others:** A number of industrial unions like United Auto Workers have a few chemical workers. The two major Communist-line unions — Mine-Mill and United Electrical Workers —are active in chemicals. In some instances, they are being, or will be, raided by non-Red unions. Both, especially UE, are likely to have a hard time holding some of their chemical workers.

Thus union strength in chemicals is widely scattered, with ICW being the most important in the field.

There are long-range plans for eventual merger of ICW with Oil, Chemical and Atomic Workers.

Both are in the united labor movement. But don't look for fast developments. The two unions already have held an exploratory meeting in the U.S. (where their International head offices are).

But the former CIO-CCL union still has a slight case of indigestion following its own recent merger. A number of internal differences have still to be ironed out.

Only then, probably, will the next merger take place. And there are a lot of differences to be reconciled in that case, too.

If and when these two largest unions in the field merge, the organization campaigns of the past will look like child's play to those of the future. There are a lot of sign-up drives ahead in chemicals.

ICW has had some recent organizing successes — Scharfe's Paint in Brantford, Viovin (Canada) in St. Thomas, Noranda Mines sulphur workers in Niagara Falls, Bishop's Asphalt Papers in London, Exolon Abrasives in Thorold, Ont., Dominion Natural Gas in a number of Southern Ontario cities and towns.

ICW's big current talking point is premium pay for shift-workers on Saturday and Sunday. "It's overdue," said a union official, "but we've broken the ice in a few places."

The chemical industry is an excellent example of high capitalization per worker. The amount of investment per employee is continuing to increase, just as it is through all manufacturing.

It's not uncommon to hear of a chemical plant making a $5 million or $10 million addition to raise productive capacity 25%, yet hiring no additional employees or, possibly, just five or 10 more.

That's a result of increasing mechanization—"automation" in many cases.

As the accompanying table shows, approximate total production (value of factory shipments) per worker is about $18,000.

Compare this with about $10,000 in 1946, $7,100 in 1920. (Actually, in terms of "real" dollars, total output per man has risen only a little since 1946).

How does output per man in the chemical industry compare with other industries?

The figure for all manufacturing is around $14,500.

The only branch of manufacturing which greatly exceeds chemicals in this respect probably is production of non-metal mineral products. On about the same level: Vegetable products, animal products, non-ferrous mineral products.

As would be expected in a highly capitalized industry requiring many skilled workers, chemical wages are above the manufacturing average.

In chemical products (DBS classification): Average hourly earnings at March 1, $1.55½ ($1.48½ a year ago); average weekly wages, $64.07 ($61.29).

In all manufacturing: $1.48½ ($1.43½); weekly wage, $61.33 ($59.12).

In some of the more highly capitalized chemical industries, the contrast with the manufacturing average is more striking.

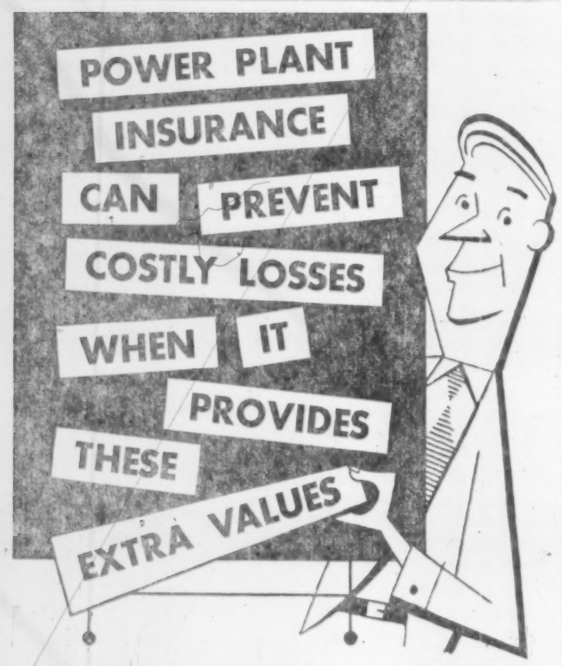
For instance, in production of acids, alkalis and salts, average hourly earnings at March 1 was $1.77, average weekly income $73.81.

That $1.77 figure rates high.

It's above the mining average ($1.66½); about equal to printing and publishing; slightly below motor vehicles; well above the construction average.

On average, manufacturing a little more than doubles the cost of raw materials by the time it has turned them out as chemical products.

But the variation within the industry is great. Manufacturing adds only about 15%-20% to raw materials in the vegetable oils industry. Thus the very high output per man. Most of that output ratio is accounted for by the initial cost of raw materials.



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New Processes Spur Ammonia Production For Many Fields

(Continued from page 63)

in some areas of the United States, and farming conditions in many parts of Canada do not justify heavy applications of fertilizers. However in some districts, notably southwestern Ontario, intensive farming methods are profitable and farmers there are coming to realize that a greater use of fertilizers pay good dividends.

It is expected that the consumption of ammonia and ammonium compounds in fertilizers in Eastern Canada will increase by over 150% in the next 10 years.

New Plants

A number of new Canadian ammonia plants are being built or are under consideration. Some of these will make use of newly developed methods of obtaining the pure hydrogen required to make ammonia.

When natural gas is the raw material, the economics of the steam reforming and partial oxidation processes are very close and a choice depends upon local circumstances. The partial oxidation process, however, provides for the first time an economical and competitive way of making ammonia from fuel oil. This new process will be used in the plant now being built by C-I-L at Millhaven near Kingston, Ont., which will have a capacity of 200 tons per day. This plant is being based on fuel oil, which can be delivered by ocean tanker when the St. Lawrence Seaway is complete. If the plans for a natural gas pipeline to Montreal materialize, this alternative raw material could be used by the C-I-L plant if it is more economical to do so.

The partial oxidation of fuel oil may be used also in the only other new ammonia project announced to date in Eastern Canada. This is the proposed plant of Quebec Ammonia Co., Ltd., at Varennes, Que.

Other recent developments in ammonia manufacturing processes include improved methods for the recovery of hydrogen from coke-oven gas or from oil refinery off-gases. Both of these sources are available in Eastern Canada. Ammonia manufacture from coke-oven gas is known to be under consideration by steel manufacturers in Hamilton and, as previously mentioned, Dow is using hydrogen from oil refinery operations at Sarnia. The Montreal refinery area constitutes the largest Canadian source of refinery gases, and is a potential location for an ammonia plant.

Ammonia production in the West is also growing. C.M. & S. is carying out an expansion program aimed at increased fertilizer production. A new fertilizer plant being built at Medicine Hat, Alta., called Northwest Nitro - Chemicals, Ltd., will have its own ammonia plant. The Sherritt Gordon metal refinery at Fort Saskatchewan includes a new ammonia plant, and there are already plans for doubling its capacity. Both the Northwest Nitro-Chemicals and Sherritt Gordon plants use steam reforming of natural gas. Another large fertilizer plant based on natural gas is being talked about for the Winnipeg area.

Most of this ammonia fertilizer activity in Western Canada is presumably based on export markets. There is no duty on fertilizers entering the United States and freight charges are relatively low.

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Uses of RCI Products

CANVAS, PAPER AND GLASS CLOTH LAMINATES: PLYOPHEN cresol, phenolic and resorcinol-formaldehyde resins and varnishes; RCI polyester resins.

CARBON PAPER: RCI inorganic chemical pigment colors.

CASTINGS: POUNDREZ powdered phenolic resins (for the shell molding process); POUNDREZ liquid phenolic resins and POUNDREZ core oils (for core binders).

FURNITURE, PLYWOOD, FLOORING, HARDBOARD AND CHIPBOARD: HYDROPHEN phenolic glues; PLYACIEN protein glues; PLYAMINE urea-formaldehyde glues; PLYOPHEN phenolic and resorcinol-formaldehyde glues.

LEATHER: BECKOSOL alkyd resins (for leather finishes); PLYOPHEN resorcinol-formaldehyde resins, SUPER-BECKACITE pure phenolic resins, SYNTHE-COPAL ester gums (for leather adhesives).

LINOLEUM: BECKOSOL alkyd resins and PENTACITE pentaerythritol resins (for linoleum coatings); RCI inorganic chemical pigment colors.

PAINTS, VARNISHES AND LACQUERS: BECKACITE (1) fumaric, (2) maleic and (3) modified phenolic resins; BECKAMINE urea-formaldehyde resins; BECKOLIN synthetic oils; BECKOPOL modified phenolic resins; BECKOSOL (1) phenolated, (2) phthalic-free, (3) rosin modified, (4) pure drying and (5) pure non-drying alkyd resins; KOPOL processed Congo copals; PENTACITE pentaerythritol resins; STYRESOL styrenated alkyd resins; SUPER-BECKACITE pure phenolic resins; SYNTHE-COPAL ester gums; WALLKYD pure drying alkyd resins (for alkyd flat wall vehicles); WALLPOL vinyl-type copolymer latex emulsions (for latex flat wall coatings); RCI inorganic chemical pigment colors.

PAPER: BECKAMINE urea-formaldehyde resins (for adding wet strength, improving the wet rub of starch-clay coatings, and waterproofing starch adhesives); RCI inorganic chemical pigment colors (for paper coloring); STYRESOL styrenated alkyd resins (for paper coating).

PRINTING INKS: BECKACITE fumark, maleic and modified phenolic resins; BECKOLIN synthetic oils; BECKOPOL modified phenolic resins; RCI inorganic chemical pigment colors.

TYPEWRITER RIBBONS: RCI inorganic chemical pigment colors.

WAXES AND POLISHES: BECKACITE modified phenolic and maleic resins; SUPER-BECKACITE pure phenolic resins; SYNTHE-COPAL ester gums.

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First High Pressure Acetylene Chemicals Plant In U.S. Now In Operation

Plant Built By Lummus For General Aniline & Film Corporation At Calvert City, Kentucky Has Been Operating Smoothly Since Startup

Early in 1956 the first full scale commercial installation in this country for the production of acetylene chemicals by high pressure techniques was placed in operation at Calvert City, Kentucky. It was engineered and constructed by The Lummus Company based on General Aniline & Film Corporation's design. GAF is the pioneer of high pressure acetylene technology in this country.

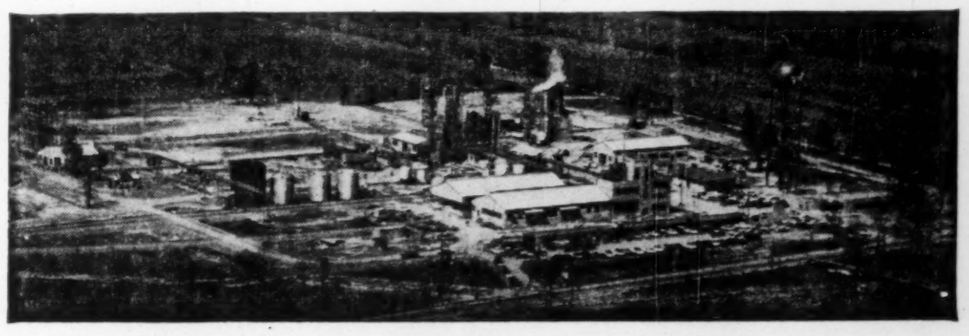
The chemicals presently manufactured include propargyl alcohol, butynediol, 1,4-butanediol, butyrolactone, pyrrolidone, vinylpyrrolidone, polyvinylpyrrolidone (PVP).

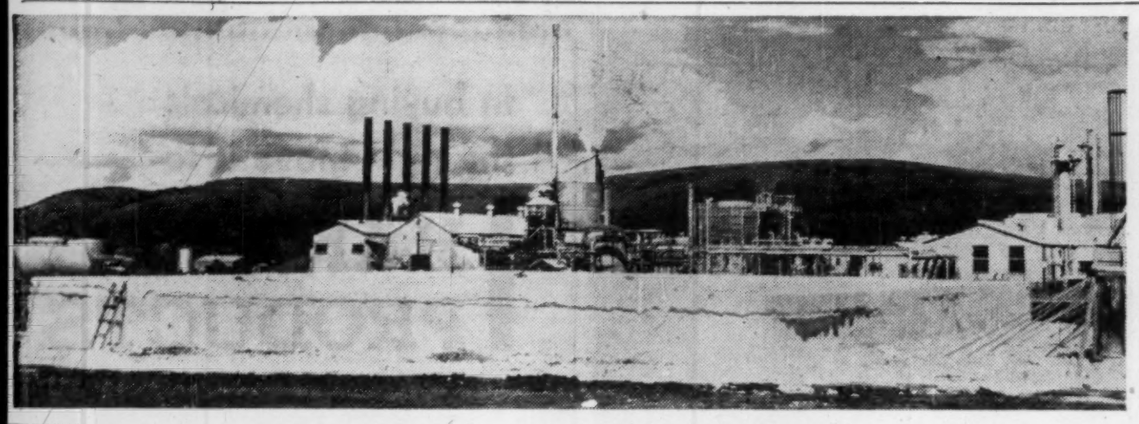
As a result of extensive research, pilot plant production and market development by GAF, these products already have wide acceptance industrially for use in cosmetics, pharmaceuticals, detergents, plastics and plasticizers, fibers, textile auxiliaries, solvents, corrosion inhibitors and germicides. With full scale commercial production now under way, industry will be able to obtain these materials at new low prices and in multi-million pound quantities.

The engineering and construction of this new and unusual processing plant required the closest cooperation between GAF and Lummus personnel at all levels, and it proceeded smoothly through a successful startup.

This project is one more indication of the ability of The Lummus Company to handle challenging installations for the chemical process industries. Look to Lummus when you have a unique engineering and construction problem.

The Lummus Company Canada Limited, 455 Craig St. W., Montreal, Que. **Engineering and Sales Offices:** New York, London, Houston, Bombay, Paris, The Hague. **Sales Offices:** Chicago, Caracas. **Heat Exchanger Plant:** Honesdale, Pa. **Fabricated Piping Plant:** East Chicago, Ind. Licensed Manufacturers of Heat Transfer Equipment throughout Canada.





ELEMENTAL SULPHUR produced from sour gas at plants like this one of Shell Oil of Canada at Jumping Pound, Alta., could in a few years make Canada virtually self-sufficient in this basic chemical product. Right now Canada has to import around 350,000 tons annually at a cost of close to $10 million. Before natural gas is delivered to the two big natural gas pipelines under construction this year (Westcoast Transmission and Trans-Canada Pipe Lines) it must be processed to remove wet hydrocarbons and hydrogen sulphide. From the latter comes the all-important elemental sulphur.

Sulphur Self-Sufficiency

Production From Sour Gas Plants May End Need To Import

Sulphur and sulphuric acid in this country are indissolubly connected with the rapidly developing mining and petroleum industries.

Right now Canadian industry is consuming some 360,000 tons of elemental sulphur annually, all but some 35,000 - 40,000 tons of which are being imported from U. S.

But potential domestic sulphur production from sour gas alone is more than enough to meet Canada's entire requirements.

Along with the two big gas pipeline projects under way this year — the Westcoast Transmission and the Trans-Canada Pipe Lines projects — will go construction of gas treating plants, including special units to recover elemental sulphur from the hydrogen sulphide present in much of the gas.

At full operating level of the two gas pipelines over 1,000 tons of sulphur daily will be recovered. As more and more sour gas fields are hitched to the pipeline systems production will be even greater.

The big Pincher Creek gasfield controlled by British American Oil has gas reserves estimated at over 1.5 trillion cu. ft. Plans are to up flow of gas out of this field gradually as the big gas markets in eastern Canada are built up.

This means sulphur recovery will increase gradually with gas requirements. Stage one in the construction of the sulphur plant will be approximately one-quarter of the size of the ultimate plant and will produce 225 long tons per day.

Ultimate plant will produce 800 tons daily. At that time the trans-Canada pipeline will be drawing some 170 million cu. ft. of gas daily from the field.

The sulphur, which will be better than 99.5% pure, will be produced in liquid form, at the plant and will be stored in both liquid and solid form. A large part of production from first plant operating stage will go to Northwest Nitro - Chemicals, Ltd., at Medicine Hat, Alta.

Plant Construction

This plant — now under construction — will require some 44,236 tons of sulphur annually in its fertilizer operations. Work has already gotten under way on the Pincher Creek sulphur plant.

A contract for sale of the large supplies of sulphur that are to be made available from processing Peace River gas, has been signed between Jefferson Lake Sulphur Co. and Pacific Petroleums Ltd. The deal also involves construction of a $1.8-million sulphur manufacturing plant near Fort St. John, B.C. A Canadian subsidiary of Jefferson Lake, one of the oldest Frasch process sulphur producers, will operate the Peace River plant and market the product.

Initial output will be at the rate of 300 long tons daily. Within five years production is expected to reach the 500-600 tons daily level. Since estimated west coast demand of the pulp and paper industry—by far biggest users — is running around 150-175 tons daily, there will be a substantial supply of sulphur that will likely have to be sold to export markets.

Canada's entire 33,000-ton sulphur output in 1955 came from two sources — sour gas and pyrites. Shell Oil Co. is recovering sulphur at its enlarged sulphur plant in the Jumping Pound gasfield in Alberta; Royalite is recovering sulphur at its plant in the Turner Valley field.

Noranda's integrated sulphur, gas and iron sinter plant at Port Robinson, Ont. has been operating for some time chiefly feeding sulphurdioxide gas to the nearby North American Cyanamid plant which in turn processes these into sulphuric acid. The Noranda plant, which operates on pyrites from its own Rouyn properties, will also shortly be turning out elemental sulphur at a 18,000-tons a year rate.

Canada's Lead

The rapid emergence of Canada as one of the leading world uranium producers is having a major impact on the chemical industry in this country and particularly the sulphuric acid picture. The acid leach process for recovery of uranium precipitates using sulphuric acid as the chemical leaching agent has been found the most economical process for most Canadian mining operations.

Since most of the uranium mines are in remote areas, far from existing acid sources, it means construction of new acid plants close to the mining operations.

Gunnar Mines, the first postwar uranium property to reach production stage, started first mining at its Beaverlodge property in northern Saskatchewan last fall. A basic project in the integrated program was construction of a modern $1 million sulphuric acid plant close to the mine site. It is estimated that Gunnar's acid requirements are running around 35,000 tons annually. The acid is processed from elemental sulphur supplied by Shell Oil Co. and Royalite Oil Co. from their sour gas recovery plants in Alberta.

Noranda Mines proposes to serve the acid requirements of the world's biggest uranium camp at Blind River, Ont. A 500 tons-a-day plant has recently been completed and is exected to go on stream shortly.

Noranda's acid plant is closely paralleled on the Port Robinson pilot plant operation. Since the Blind River plant is situated on deep water navigation it can transport its iron to Great Lakes steel mills and sell its sulphur to pulp and paper mills in the area.

All in all, the day is not far removed when Canada will become a major producer of elemental sulphur — from sour gas and pyrites. Right now Canada is importing sulphur — chiefly from U. S.—at an annual rate of around 330,000 tons at an annual cost of some $9.4 million.

The Acid Picture

Sulphuric acid has long been looked on as one of the best barometers of any country's industrial health. No chemical is so essential to such a broad range of industry. Steel, textiles, fertilizer, synthetic detergents, pulp and paper, chemicals, mining, rubber, explosives, etc., are just a few of the basic industries in this country that require substantial tonnages of acid.

Right now with Canada's industrial activity at peak levels acid demand for the first time is running over the one-million-tons-a-year level. Last year total production was 954,000 short tons (100% acid) — an increase of about 17% over 1952. Production is running "somewhat ahead" of last year a leading producer told The Post.

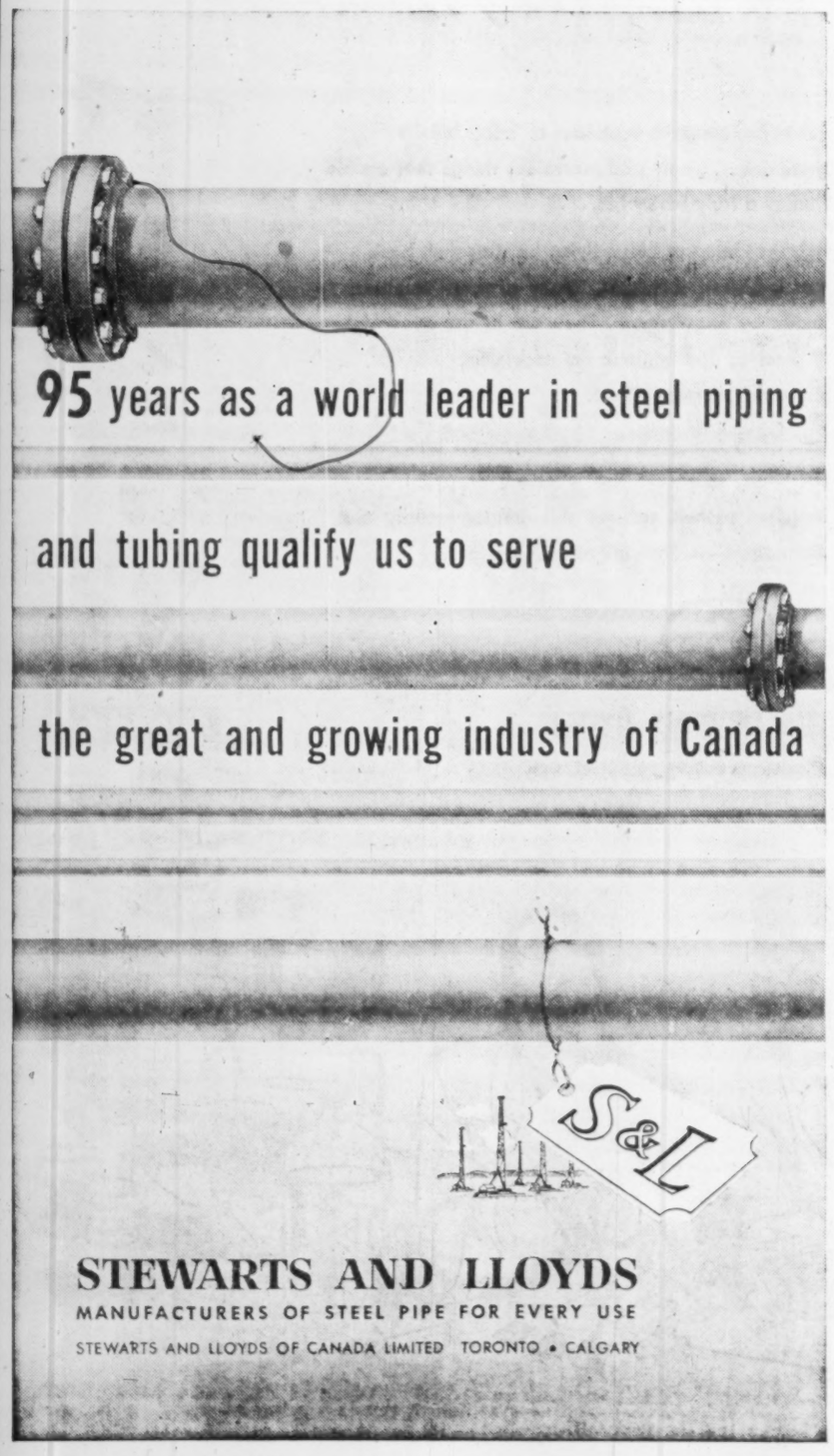
Canada's acid producers have been able to keep up to this steadily expanding demand. But they have had to display considerable ingenuity and spend millions of development dollars to do it. Acid is being recovered from smelter fumes, pyrites and elemental sulphur. The major portion is being recovered from the smelter fumes of Consolidated Mining & Smelters Corp.'s smokestacks at Trail and the smokestacks of International Nickel Co. at Copper Cliff, Ont.

Biggest acid market, by far, is the fertilizer industry. Canadian Industries Ltd. processes both sulphuric acid and liquid sulphur dioxide from flue gases of International Nickel at Copper Cliff. C.I.L. also makes acid from elemental sulphur at its Hamilton, Ont. plant.

Nichols Chemical Co. is the biggest producer — although Noranda will probably take the lead later—of acid from pyrites. Company will finish a substantial expansion program (to boost output by 60%) at its Valleyfield plant this fall. Has now installed some 35% of this expansion. North American Cyanamid is processing the acid from sulphur dioxide at its Welland, Ont. plant. The sulphur dioxide is being provided by Noranda from its Port Robinson, Ont. chemical plant.

The new $1 million sulphuric acid plant of Inland Chemicals Ltd. at Fort Saskatchewan, Alta. has been operating since last fall. The 100-tons-per-day plant is located adjacent to the nickel ore processing plant of Sherritt-Gordon Mines and is using as feedstock pure sulphur produced by Shell Oil Co. of Canada at its Jumping Pound, Alta., gas treating plant.

Shawinigan Chemicals is now building a sulphuric acid plant at Shawinigan Falls. The new plant will have a capacity of around 25,000 tons per year.



How TIMKEN bearings maintain rotor adjustment in versatile, heavy-duty pump

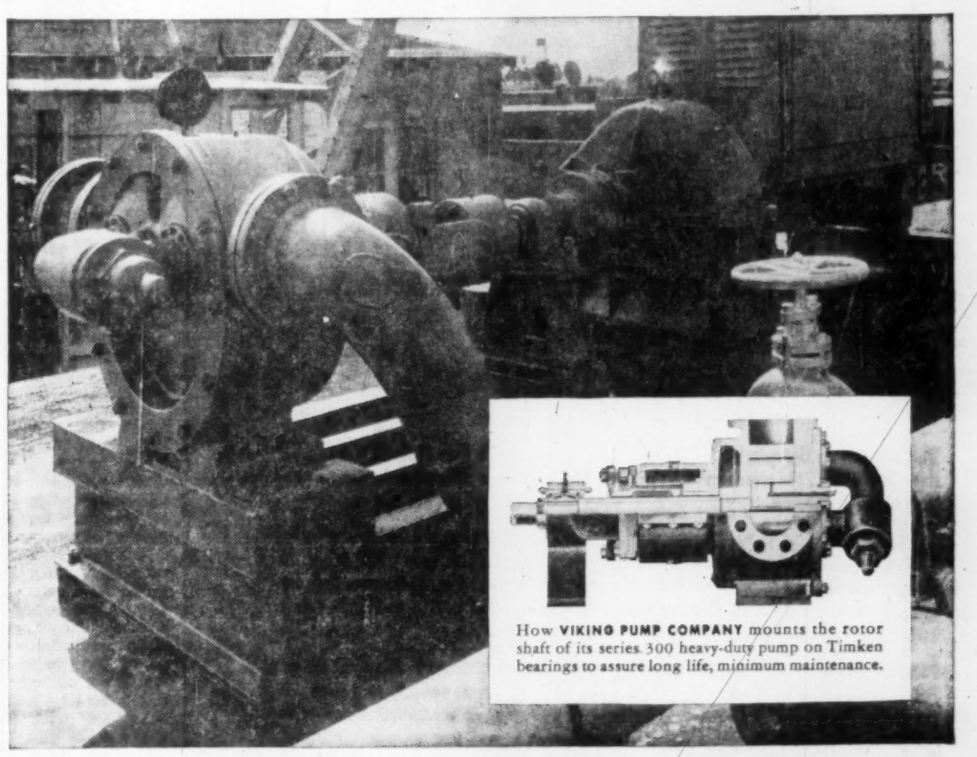
THE Viking Pump Company's series 300 heavy-duty pump was designed to give dependable performance, pumping thin or thick liquids. To make sure it delivers, Viking engineers specify Timken tapered roller bearings for the rotor shaft.

Timken bearings provide thrust control for the large power-driven rotor shaft gear. They permit adjustments for proper end clearance and also prevent the pump rotor from wearing against the pump head. Their tapered construction lets them take heavy thrust loads as well as radial loads in any combination.

Timken bearings hold wear to a minimum because they practically eliminate friction. That's because they're designed to roll true and because they're made with microscopic accuracy to conform to their design. You're doubly assured of Timken bearings' quality because we make our own steel.

So for long life and minimum maintenance, always specify Timken bearings. Look for the trade-mark "Timken" on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio, U.S.A. CANADIAN PLANT: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



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Chemists Grow Crops

From Industry's Test Tubes Come Increased Farm Yields

More and more the chemist is moving in as the silent partner in the food-growing industry.

Last year his contribution was a flow of $93 million of chemical fertilizers for tired Canadian and foreign soils.

Like industrial plant machinery which must be ready to start on a new production cycle when the next work shift comes in, so Canadian fields must be prepared to start their creative food cycle all over again once the last crop has been harvested.

Agriculture's dependence on chemistry can only get greater as the years go on. The pattern is clearly etched against a background of rising farm costs and mounting food requirements from expanding world population.

The fact that one dollar's worth of fertilizer results in increased yields of between two and five dollars' worth of farm products must inevitably become an economic aid that majority of farmers cannot afford to by-pass.

But farmers still apportion their fertilizer expenditures according to crop revenue — cutting down a little when farm prices drop or crops are slow moving to market. The last couple of years this has resulted in the first important setback in rising fertilization consumption pattern on the prairies.

This year the expanding fertilizer trend in southwestern Ontario—the area that accounts for some 55% of entire Canadian usage — is being interrupted not by prices or markets but by climate.

Demand Sags

The unprecedented wet, cold spring weather which has kept farmers off the land is cutting sharply into fertilizer demand. With all stress on getting crops in as quickly as possibly whenever the fields dry up sufficiently the farmer is just not taking the time to apply fertilizer to the same extent as last year. At the moment fertilizer tonnage looks running anywhere from 10%-15% behind same date last year.

The unusual spring weather is also causing quite a shift in crops in the big cash crop area of Ontario. Many farmers who had planned growing corn are now shifting to such later, faster-maturing crops as soya beans. This in turn will have a major impact on fertilizer demand since corn is such a big user of nitrogen type fertilizers and soya bean a relatively small user of any type of fertilizer.

This slowed-up demand plus sharp expansion in fertilizer material and mixing plants has brought about very competitive conditions in the southwestern Ontario area this past month.

"In my 25 years in the fertilizer business in Eastern Canada I have never seen such competitive conditions as are now prevailing," head of a large Ontario fertilizer mixing firm told The Post this week.

This is showing up in price-shaving, "special" fertilizer discounts, etc. In the anhydrous ammonia field alone there are now seven separate distributing stations in southwestern Ontario; last summer there were only four.

Outlook Affected

There is no doubt the recent sharp drop in ammonium sulphate prices — from $42 to $32 a ton — is going to affect the whole outlook of the fertilizer industry. Some chemical officials see this as the first signs of postwar overproduction in the greatly expanded chemical industry.

It could change the plans of a number of big new chemical plant construction programs, in U. S., maybe serve to shelve one or two multi-million dollar projects in the early planning stages in this country. Just this week ammonia followed the downward price trend slipping from $85 to $80 a ton.

The U. S. Dept. of Agriculture touched off the unprecedented building spree in nitrogen production plants in that country when, in 1952 it forecast a tremendous increased demand for ammonia in the fertilizer business. To keep up to food-growing requirements department economists called for a threefold expansion in ammonia output by 1955.

In the interval more than two dozen plant construction — or expansion—programs have been announced in that country. To add to the heavy increased flow of nitrogen type fertilizers has been the greatly expanded output of ammonium sulphate from coke oven operations of steel plants.

In Canada seven ammonia plant projects have either been completed in last two or three years or are in advanced planning stages.

This whole ammonia picture looks as if it could continue highly competitive for another two or three years. But the long-term trends are all in favor of steadily expanding use of nitrogenous type fertilizers with the accent chiefly on ammonia. Rising world population, flattening out in available farm acreage and rising farm costs all underwrite expanding fertilizer markets all over the world.

Higher Analysis

The most important trend in the Canadian fertilizer industry today is the move toward higher analysis fertilizers with both nitrogen and potash increasing their relative positions. This trend is a direct result of higher farming and transportation costs. Farmers today want the most concentrated chemical foods for their soil their dollars can buy. They don't want to pay for extra handling and transportation charges for the same final result, administered in two applications. As a result of this there has been quite a swing this year to use of 4-42-20 (the proportions are always in this order . . . nitrogen, phosphate and potash). This is used for a wide variety of Eastern Canada crops, corn, roots, etc.

Anhydrous ammonia is playing a very important part in this switch to higher analysis fertilizers. It is the most concentrated of all nitrogen fertilizers and besides being used for direct application to the soil it is also used to make ammonium nitrate and many mixed fertilizers.

The anhydrous ammonia is usually applied before seeding and can then be followed at seeding time by an application of a complete fertilizer formulation such as 0-10-10, 0-20-20, 2-24-20, etc. Direct application nitrogen has already been used on such cash crops as corn, sugar beets, wheat, pastures, etc. in southwestern Ontario.

Anhydrous ammonia is applied to the soil by applicators which feed it into the ground at a depth of four to six inches through tubes attached behind cultivator chisels. Best results are obtained when soil is relatively dry so that ammonia can circulate freely throughout soil.

Rich Crop Areas

Biggest selling job on direct application of nitrogen liquids to the soil is in the rich cash crops area of southwestern Ontario. In majority of cases the big chemical manufacturers of ammonia sell the fertilizer distributors who maintain transportation and storage facilities and in certain instances the applying equipment which they sell or rent to the farmers, or applying companies. Right now seven different fertilizer companies have set up ammonia distributing stations in southwestern Ontario.

Both Dow Chemical of Canada and North American Cyanamid have expanded nitrogen plant facilities to enable a sizeable development of the Ontario ammonia market. North American Cyanamid brought into operation last spring at its Port Robinson, Ont. plant a new unit for first Canadian production of nitrogen solutions. Dow Chemical brought a new $3 million ammonia plant into operation last summer, now has a total capacity of over 100 tons of anhydrous ammonia daily. Both firms are pushing extensive promotion programs for direct application of ammonia and nitrogen solutions to the cash crop soils of southwestern Ontario.

In the fertilizer year ended June 30, 1955 Ontario alone used some 429,000 tons of total Canadian 791,000 tons consumption. Although Ontario usage was up 5%, total for Canada

(Continued on page 67)

LATEST ADDITION to the "Polly" plastic family is a polyethylene diaper pail, soon to be available in two colors, baby blue and pink. The pail will not rust, corrode or stain. The resiliency of the plastic prevents damage to the pail; it will not scratch walls or furniture. With a close-fitting lid it is hygienic and does not absorb odors. The pail — delightfully displayed by Jane McCullough—will soon be introduced in Canada by Smith & Stone Ltd., Georgetown, Ont.

Prices Dipping For Ammonia

Synthetic ammonia has been cut in price in Canada and U. S. because of rapidly growing over - production, particularly south of the border.

Other big factor in price drop has been disappointingly low demand from the farmer and the fertilizer industry.

Ammonia is used both in mixed fertilizers, with other plant foods, and in direct application to the soil, as a gas under pressure. It also goes into refrigeration plants and is an important raw material for making other chemicals.

In U. S. current capacity for producing ammonia has jumped to 4,143,000 tons, produced in 43 plants owned by major chemical makers as well as oil companies. There are 11 more plants now being built which will bring capacity to 4,860,000 tons some time next year. Ten years ago total capacity was only 725,000 tons.

In Canada where three ammonia producers have recently boosted plant capacity and three more are building sizeable new plants the price cut comes as quite a sore blow.

Not only does this move reduce profit margin but promises to make fertilizer export selling in the big U. S. market that much more competitive. U. S. and Canadian firms are now cutting prices on the average from $85 to $80 a ton effective July 1.

Recently ammonium sulphate price was dropped from $42 to $32 a ton, also reflecting heavy accumulating supplies.

In buying chemicals the right move is to

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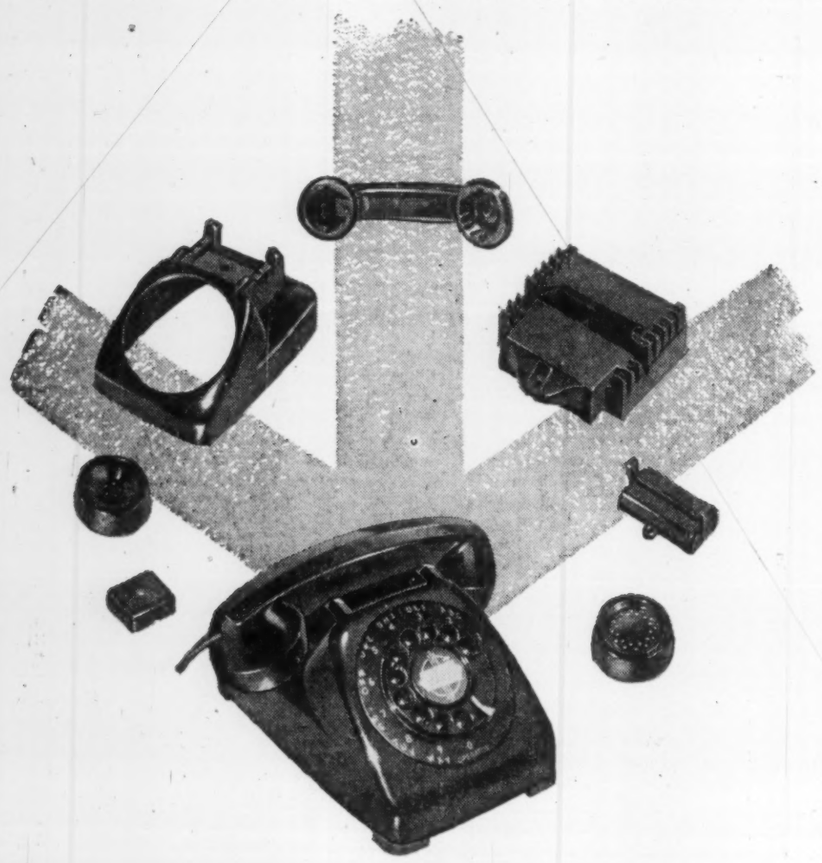

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Shawinigan is searching constantly for new chemicals and new uses for existing ones. Thus, whenever and wherever organic chemicals are required to help achieve still greater security and prosperity for Canadians — Shawinigan will be there!

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Head Office: Shawinigan Building, Montreal, Que.
Plants: Shawinigan Falls, Que.

New Chemical Sinews

This table shows at a glance the tremendous expansion programs being undertaken by the Canadian chemicals industry this year and next. It previews new chemicals markets and a sound economy ahead.

FIRM AND EXPANSION	WHEN COMPLETED	PLACE	COST ($ Mill.)
B.A.-Shawinigan			
Expanding plant facilities to boost phenol and acetone capacity by 50%.	Early 1957	Montreal East	...
Dow Chemical of Canada			
Increasing ethylene plant capacity by 100%.	Late 1956	Sarnia	...
Increasing chlorine capacity by 30%.	Late 1956	Sarnia	...
Expanding glycol plant capacity.	Late 1956	Sarnia	...
Ethanolamines plant now under construction.	Late 1956	Sarnia	...
Pentachlorophenol plant to get under construction soon.	Early 1957	Sarnia	...
Polystyrene plant streamlining and expansion to get under way within few weeks.	Late 1956	Sarnia	...
Contract for construction of first styrofoam plant in Canada to be let shortly.	1957	Sarnia	...
Engineering design under way on new fluorinated hydrocarbons plant.	1957	Sarnia	...
Engineering under way on new plant to make polyethylene resins.	1957	Sarnia	...
Under consideration is new plant for manufacture of xanthates.		Sarnia	...
		DOW TOTAL	12
Canadian Industries Ltd.			
200 tons-a-day ammonia plant.	Late 1956	Millhaven, Ont.	9.0
Expanding fertilizer plant to manufacture ammonia solutions.	Late 1956	Beloeil, Que.	...
New plant to produce hydrogen peroxide.	1957	Hamilton	...
Canadian Chemical Co.			
Constructing new warehouse and processing plant.	Late 1956	St. Johns, Que.	1.5
Canadian Resins & Chemicals			
Plant addition to produce polyethylene films and lay-flat tubing.	Late 1956	St. Therese, Que.	...
Canadian Plant Foods Ltd.			
Actively considering big nitrogenous fertilizers plant.		Winnipeg	20
Canadian Oil Cos.			
Is expanding petrochemical manufacturing facilities to produce benzene, toluene and xylene.	By mid 1957	Sarnia	3.0
Du Pont Co. of Canada			
Explosives plant.	Late 1956	Near North Bay	7.0
Plant to make Orlon acrylic fibres.	Mid 1957	Maitland, Ont.	8.0
Expansion of cellulose film.	Mid 1956	Shawinigan Falls	3.2
Expansion of nylon facilities.	Mid 1956	Maitland and Kingston	
Hydrogen Peroxide plant.		Maitland	...
Electric Reduction Co. of Canada			
Plant for production of sodium chlorate.	Early 1957	Vancouver	5.0
Plant to produce phosphorus, sulphuric acid and "wet process" phosphoric acid.	Early 1957	Hamilton	5.0
Hooker Electrochemical			
First West Coast chlorine and caustic soda plant now under construction.	Early 1957	Vancouver	11
Ethyl Corp. of Canada			
Plant for first Canadian production of anti-knock compounds (TEL).	Late 1956	Sarnia	12-15
B. F. Goodrich Canada			
Plant for production of geon polyvinyl plastics.	Early 1957	Niagara Falls, Ont.	3:5
Imperial Oil			
Plant to produce detergent alkylates.	Mid 1957	Sarnia	3.8
Considering plans for further large-scale move into petrochemicals. Early announcement expected.		Sarnia	...
Jefferson Lake and Pacific Petroleums			
Sulphur extraction plant.	Late 1957	Fort St. John, B.C.	1.8
Monsanto Canada			
Synthetic resins plant.	Late 1956	Edmonton	...
Naugatuck Chemicals			
Expanding facilities, laboratory.		Elmira, Ont.	...
Northwest Nitro-Chemicals			
Constructing fertilizer plant; 140,000 tons annual capacity at first.	Late 1956	Medicine Hat, Alta.	22
Polymer Corp.			
Planning construction of new butadiene plant.		Sarnia or in Alberta	12-15
Improving production facilities.		Sarnia	1.5
National Silicates			-
Plant to make silicate of soda.	Early 1957	Valleyfield	...
Quebec Ammonia			
Plant to make nitrogenous fertilizers.		Brockville area	7.0
Shell Oil Co. of Canada			
Adding facilities to produce methyl ethyl ketone and secondary butyl alcohol.		Montreal East	...
St. Maurice Chemicals			
Planning to boost capacity of formaldehyde and pentaerythritol.		Varennes, Que	...
Davison Chemical Co.			
First Canadian plant to produce synthetic fluid petroleum cracking catalysts.	1957	Valleyfield	6.0
B-A Oil			
Condensate and sulphur plant, 225 long tons sulphur daily, ultimately 800 tons.	1957	Pincher Creek, Alta	7.0 (1st stage)
North American Cyanamid			
Xanthate plant to supply mineral flotation chemicals.	Late 1956	Welland	...
Amino triazole unit.	Late 1956	Welland	...
Expanding nitrogen solutions plant.	Late 1956	Welland	...
Shawinigan Chemicals			
New plant to produce caustic soda and chlorine.	1957	Shawinigan Falls	5.0
New sulphuric acid plant.	Late 1956	Shawinigan Falls	1.0
		APPROXIMATE GRAND TOTAL:	200

From Industry Test Tubes Increased Yields, Quality

(Continued from page 66)

was down slightly from previous year's 812,000 ton consumption. Heaviest fertilizer users in Canada are the counties of Kent (66,000 tons), Norfolk (44,000 tons), big tobacco growing areas.

The biggest factor in the flattening out of the fertilizer consumption trend in last couple years in Canada has been reduced use of ammonium phosphate on the prairies. Use of this product which accounts for some 90% of all prairies fertilizer consumption has dropped from 98,000 tons in 1952-53 crop year to just around 50,000 tons in 1954-55 year. Consumption will be down again in the 1955-56 year.

Sales Up In '55

Canada's largest producer of fertilizer materials — Consolidated Mining & Smelting Co.— was able to boost sales substantially in 1955, despite the continuing depressed market conditions on the prairies.

This was due principally to a large increase in sales to offshore markets and some expansion in sales to the U. S. market. Although total sales of solid fertilizers was down slightly (15,000 tons) at 678,802 tons (second biggest year in company's history) sharply increased sales of anhydrous and aqua ammonia into the Northwestern States boosted over-all output to new peaks.

This trend toward increasing output of liquid fertilizers is being maintained in the current year.

Cominco officials are carefully watching developments in the big Northwest U. S. market where they sell bulk of their fertilizers. Several different U. S. groups have announced plans to build plants to produce nitrogenous type fertilizers there.

Although this is a fast-growing market for fertilizers, recent sharp price drop in ammonium sulphate and current price heaviness in ammonia could cause postponement of one or two of these projects. Although construction of the Pacific Northwest gas pipeline through this area will make available plenty of methane for ammonia production any company setting up there would have to bring its phosphate rock in, possibly from Montana.

Medicine Hat

The major new fertilizer project on the prairies is the $22 million plant of Northwest Nitro-Chemicals now well under way at Medicine Hat, Alta. Scheduled for completion late this year the plant will have an initial capacity of 140,000 tons of dry fertilizers annually. Chief products will be ammonium phosphate and nitrate fertilizers.

Purchase contracts for basic raw materials — phosphate rock and sulphur—have already been made. Company will use natural gas from the nearby Etzikom Field in manufacture of ammonia. Estimated annual requirements are 2,360,000 m.c.f. of natural gas; 44,236 tons of sulphur and 137,300 tons of phosphate rock.

Two principal sponsors and shareholders of the project are Commercial Solvents Corp., New York and New British Dominion Oil Co., Calgary. Commercial Solvents will have an effective control of the company through a 43% common stock ownership. CSC will also operate the plant under a long-term management contract.

Fertilizer sales will be made to the four western Canadian provinces and the northern U. S. The contract for sulphur, to be shipped in tank cars at a volume rate of 125 tons per day, is with British American Oil Co. (formerly Canadian Gulf Oil) and will come from its Pincher Creek field in southern Alberta.

South Alberta Pipelines Ltd., which will supply the natural gas to the large fertilizer plant, is now under construction. It will have a carrying capacity of 19.5 million cu. ft. daily without compression; or up to 30 million cu. ft. with compression. Initial pipeline load is estimated at 12 million cu. ft. daily.

Another possible western fertilizer plant is that one being considered by Canadian Hydrocarbons Ltd. and two other major partners. This company was set up last year to engage in various hydrocarbons enterprises. Among proposals considered last year was a $20 million synthetics fertilizer plant.

Plans envisaged a 600-ton daily output of mixed fertilizers including some 80 tons of fixed nitrogen. One of the basic raw materials was to be natural gas from the transCanada gas pipeline. Proposals were to consume some five million cu. ft. of gas daily in ammonia production.

Site being considered most seriously was Winnipeg. When the transCanada gas pipeline bogged down in market, and financing, difficulties the whole project was shelved.

Now with likelihood that the western phase of the gas pipeline will be completed by late fall to Winnipeg another market survey has been made and the whole plan is again under serious consideration.

Sherritt-Gordon is currently turning out sizeable tonnages daily of ammonium sulphate in connection with its chemical recovery of copper, nickel and cobalt at its new Fort Saskatchewan, Alta., metallurgical plant.

Here is the picture further east:

Good progress is being made on the new $9-million ammonia plant of Canadian Industries Ltd. at Millhaven, Ont. Plant is expected to come into operation this fall. With a daily capacity of 200 tons of ammonia this will be the largest such plant in Canada.

The new plant will provide C-I-L with the means of offering a complete range of agricultural fertilizers. Plant facilities at the Beloeil, Que. fertilizer plant will be extended to manufacture ammonia solutions using ammonia from Millhaven plant.

The new ammonia plant will use, for the first time in Canada, a new process involving the partial oxidation of fuel oil under pressure. The process which uses a heavy residual oil as a starting material was just recently developed and is now being installed for the first time in a U. S. plant in Maine.

Ammonia Plant

Quebec Ammonia Co. is still actively planning construction of an $8-million ammonia plant. Although site under investigation was earlier given as Varennes, near Montreal, company officials are now reported looking at a new site in the Mallorytown, Ont., area, not far from the Maitland, Ont., plant of Du Pont Co. of Canada, a potential large-volume customer.

Plant plan being considered is a total daily capacity of 125 tons of combined chemicals including anhydrous ammonia, nitric acid and fertilizer solutions. President of company and leading figure in the project is Robert Campbell, Western Canadian construction and gas executive.

A contract reported tentatively arranged with Du Pont would cover a 10-year contract period. Ammonia is used in fairly substantial daily volumes in Du Pont's manufacture of nylon intermediates at its Maitland, Ont., plant.

The phosphate and potash producers are experimenting with direct application methods too and pushing the idea of a balanced plant food — including all three nutrients — at the same time. In Canada, Electric Reduction Co. — big producer of specialized phosphates for industrial use — is seriously looking into plans to enter the phosphate fertilizer field as well.

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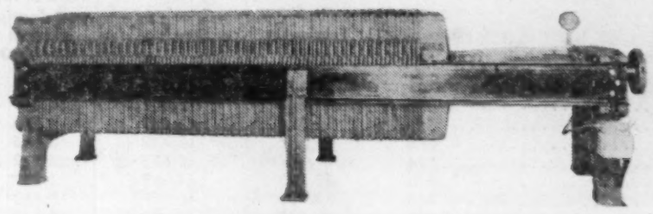

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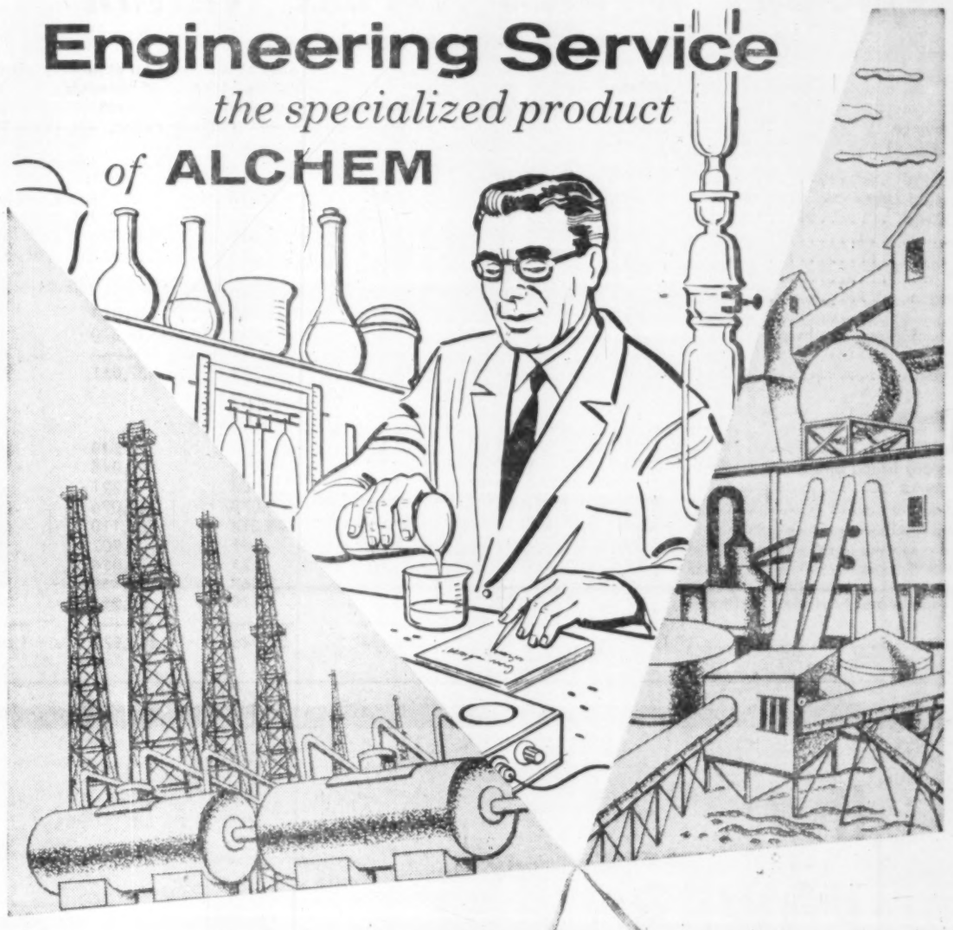

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Provincial Research Groups Help Chemical Industry

(Continued from page 57)

cause it was easily oxidized and ultimate composition of the product was very similar to that of the average composition of humic acids from various coal sources.

To extend the scope of research on Nova Scotia coals, the Research Foundation has provided postgraduate scholarships to Nova Scotia graduates for coal research under Dr. W. L. Whitehead, in the Dept. of Geology and Geophysics, Massachusetts Institute of Technology. These students have been engaged in research on the coking and plastic properties of coal, the determination of clay materials in sediments, and the extraction of coal with phenanthrene.

The investigation of various processes employed in the manufacture of extracts from Irish moss has continued at the Nova Scotia Technical College under Dr. D. B. MacLean. Research on the continuous extraction of Irish moss was started in 1953. For the extraction of carrageenin from Irish moss a counter-current method would be difficult to devise and to operate. Consequently, work was directed to the development of a co-current process, which, while not so efficient as the counter-current type, had advantages over batch operation.

An experimental extraction unit was built in which a continuous co-current extraction process could be evaluated. The effect of contact time, temperature and concentration of solids in the feed was studied over the operating range of the equipment. It was found that about 80% of the total soluble solids in Irish moss could be extracted with a contact time of eight minutes and a temperature of 90 C.

In 1954 a series of experiments to test the absorption of radio-active elements by horticultural plants was initiated at the Kentville Experimental Station.

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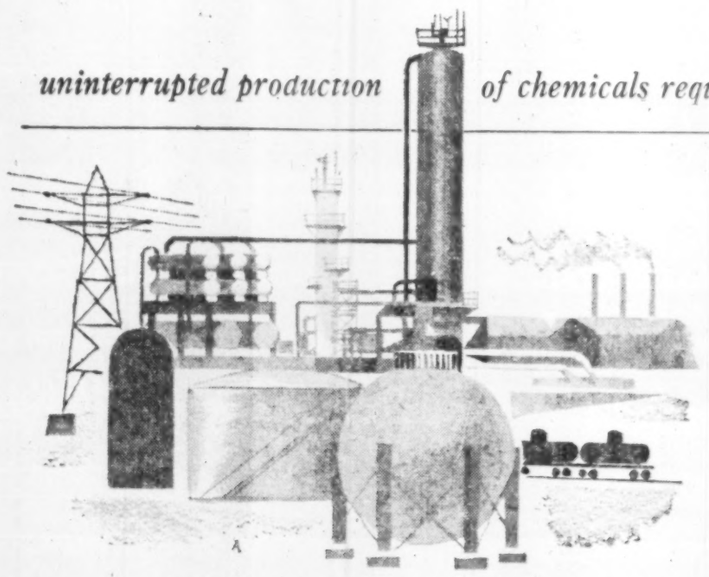

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This Mighty Chemicals Empire . . .

CHEMICAL AND ALLIED INDUSTRIES

Year and industry	Establishments No.	Employees No.	Earnings	Cost of fuel and electricity at plant	Cost at plant of materials used	Gross selling value of products*
			(000's of dollars)			
1920	451	16,651	20,695	3,259	58,550	117,831
1925	510	14,128	17,887	3,274	42,855	99,393
1929	557	16,694	22,639	4,575	55,184	138,545
1933	696	15,397	18,739	3,155	34,272	92,821
1937	754	21,968	28,613	5,222	64,461	148,973
1939	808	22,595	31,568	5,259	65,231	159,537
1943	945	92,288	146,677	17,653	368,111	765,218
1946	1,021	37,378	66,538	13,340	159,308	376,288
1949	1,037	41,328	100,691	19,218	280,009	587,398
1950	1,033	41,475	106,794	21,998	307,706	646,871
1951	1,037	45,664	131,310	25,506	366,958	776,489
1952	1,075	47,694	148,076	24,656	357,818	796,562
1953	1,105	50,207	164,591	29,541	403,686	881,503
1955 (Preliminary)						
Coal tar distillation	11	532	2,081	659	7,898	12,832
Heavy chemicals	46	8,642	36,113	15,406	62,461	175,307
Compressed gases	47	1,390	4,751	575	2,841	17,780
Fertilizers	39	2,947	11,569	2,634	42,481	92,968
Medicinals and pharmaceuticals	208	7,494	23,281	788	33,072	104,898
Paints and varnishes	123	5,975	20,989	859	61,595	120,282
Soaps and washing compounds	137	3,770	13,891	1,290	44,371	100,379
Toilet preparations	96	2,145	5,635	133	13,625	36,090
Inks	35	960	3,309	124	5,927	14,729
Vegetable oils	12	683	2,512	695	42,325	50,770
Adhesives	30	572	1,922	367	4,986	10,691
Polishes and dressings	45	757	2,567	97	8,704	19,551
Plastics (primary only)	23	2,920	12,376	1,501	39,333	75,501
Miscellaneous**	260	12,671	43,538	8,218	112,260	217,670
TOTAL	1,112	51,463	184,534	33,346	481,879	1,049,448

*—Factory shipments for 1952 and subsequent years.
**—Includes explosives, hardwood distillation, insecticides, matches, dry colors, etc.

. . . Spreads Wealth Across Nation

CHEMICAL AND ALLIED INDUSTRIES

Province	Establishments No.	Employees No.	Earnings	Cost of fuel and electricity at plant	Cost at plant of materials used	Gross selling value of products
1954 (Final)			(000's of dollars)			
Newfoundland	6	78	215	17	616	1,289
Prince Edward Island and Nova Scotia	18	317	892	126	3,974	6,944
New Brunswick	7	147	429	61	2,810	4,015
Quebec	367	21,647	71,384	9,088	144,826	311,816
Ontario	550	24,725	86,759	19,285	239,579	513,633
Manitoba	41	698	1,890	160	6,630	11,934
Saskatchewan	9	199	698	40	2,217	3,257
Alberta	31	1,427	6,018	1,900	10,089	25,923
British Columbia and Northwest Territories	87	2,365	9,027	1,536	26,310	56,914
CANADA	1,116	51,603	177,312	32,213	437,051	935,725
1955 (Preliminary)						
Newfoundland	5	79	226	18	740	1,409
Prince Edward Island and Nova Scotia	18	347	930	121	4,045	6,939
New Brunswick	7	129	439	63	3,221	4,490
Quebec	362	21,135	74,333	9,078	162,096	342,197
Ontario	549	24,842	89,668	20,394	265,110	575,264
Manitoba	39	721	1,936	161	6,902	12,311
Saskatchewan	11	202	749	25	2,056	3,206
Alberta	29	1,518	6,719	2,367	12,458	36,944
British Columbia and Northwest Territories	92	2,490	9,434	1,119	25,251	66,688
CANADA	1,112	51,463	184,434	33,346	481,879	1,049,448

Here's A Revolution in Paint

All The Colors Of The Rainbow—And Then Some

A phenomenal acreage of wall, floor and ceiling space is due to be painted in Canada this year. You'll have to keep moving to avoid the flying brushes.

Marking the latest step in a synthetics revolution, paint varnish and lacquer sales are forecast as much as 10% greater than record-breaking 1955 or more than $125 million. Figures for the first four months of this year alone show a close to $5 million bulge over year-ago totals.

Synthetics and new techniques are the big reasons for the gain. Latex emulsion type coatings, alkyds and polyvinyl acetates are the main ones with some additional developments in masonry coatings, silicones and multi-color finishes widening the available array. Each of the synthetics — largely developed since the World War II — is tailored for specific kinds of jobs.

Also pushing up sales is continued industrial expansion in Canada — creating a growing "supply" of new plant space which needs to be painted. Although trade and industrial sales account for about 85% of total business, domestic demand is strong as a result of higher personal income and new housing

Acrylic resins, more expensive than latexes, are interchangeable with latex-base emulsions for some uses. They keep their color well, are washable and are resistant to oxidation and alkalis. A developing use is as a masonry coating since the acrylics can breathe to allow passage of moisture — at a rate that will allow quick evaporation. However, they won't withstand hydrostatic pressure.

Alcohol-soluble acrylics now are being produced. In addition, a lump resin, compatible with drying oils, is available and useful to improve toughness, ageing qualities and adhesion of coatings.

Acrylics are formulated for both interior and exterior use and are favored by many contractors since they dry quickly enough for a second coat to be applied over the first within a few minutes, making it unnecessary to set up scaffolding twice n the same area. Fast drying plus relatively low odor make acrylics good bets for use in schools, hospitals, restaurants and stores.

Polyvinyl acetates, emulsion-type synthetics, are being marketed by several major manufacturers in varieties suited for both indoor and outdoor surfaces. On the market for some 20 years, it wasn't until comparatively recently that chemists teamed up to beat problems of adhesion to exterior wood.

Advantages of the coating:: Won't oxidize or discolor, alkali resistant, quick-drying, freeze-thaw stability, odorless. Main disadvantage is the acid quality of the paint.

Other vinyl-type emulsions include polyvinyl chloride/acetates and straight polyvinyl chloride.

Most of the polyvinyl type coatings offer similar characteristics to the acrylics for outdoor use and masonry coating in particular.

Polyvinyl acetate paint can be sprayed, brushed or roller coated and is easily spread. In addition, it dries to a smooth velvety finish free of brush or lap marks. It is suited for enclosed areas such as in hospitals, public buildings, hotels, etc. because of relatively odor-free characteristics. It can be applied to concrete, stucco, masonry, brickwork, asbestos siding and wallboards and is permeable to water vapor.

Alkyds are appearing in a growing variety of forms. One company has a coating featuring special cross-linking properties which provides a tough, hard film resistant to chemical and mechanical wear even when applied heavily. The alkyds rival latex-base paints in their share of the current market, largely because of their durability, washability, ageing characteristics, stability and high water impermeability. They usually are formed by processing glycerine or pentaerythritol phtalic anhydride and vegetable oils.

A recent development has been marketing of acrylic-modified alkyds claimed to be resistant to brittleness as they age, fast-drying and to have light colors which hold. Some of them also have a high gloss.

Painters recommend use of alkyd type paints for a variety of indoor jobs including hot plaster, floors and furniture. Earlier difficulties in developing alkyds that brushed easily now have been pretty well eliminated, ending the main objection to them for jobs of these types.

Outdoors, alkyds are not too good for body colors of wooden houses since a weaker oil type film is more flexible and able to cope with expansion and contraction and water vapor problems more easily. Their best application is for exterior trim work and for any application on metal or on exterior wooden floors.

The latex-base or rubber paints are essentially tiny particles of rubber suspended in water with pigments. On a wall, the water evaporates, the pigment coalesces with the latex and forms a thin rubberlike film. It's particularly popular for home use since it is easy to apply, odorless and can be applied directly without a primer coat on plaster walls.

In ingredients, there are several promising specialty resins on the market or being developed. A pale-colored hydrocarbon resin, soluble in mineral spirits, is useful as a means of increasing drying speed of oils and alkyds and improving chemical resistance. For furniture finishing, there's a carbamide resin which is flexible, solvent and chemical resistant.

Helping in automobile finishes is a keystone condensation resin which can be added to baked or air-dried finishes. It improves chemical resistance, improves adhesion and adds to the glossiness of finishes. In addition, it can be dissolved in most organic solvents and is practically colorless.

Polyvinyl ethers have been developed in a range from rubbery solids soluble in water and organic solvents to horny resins which add to toughness and adhesion.

1,322 Colors

Developments in new pigments include studies in the use of powdered zinc in paints to reduce corrosion in metals and the introduction of powdered silicon carbide to enhance the abrasion resistance of paints. Several new colors, including orange and maroons, have been put on the market recently featuring better mixing and matching qualities than were previously available.

In the color field too has come promising growth in range with systems such as Imperial Varnish and Paint Co.'s "colorizer" system whereby an assortment of 1,322 possible colors can be obtained by mixing various pigments with three basic shades — white, grey and a deeper shade.

Increasing use of concrete block and poured concrete for building construction has opened a wide demand for masonry coatings that can be applied inside and out, above and below ground.

The main problem: Porous nature of material being covered allows moisture to pass through easily, concrete tends to be alkaline and destroy many conventional coatings.

Most common masonry paints being used are acrylics, polyvinyl acetates and polyvinyl chlorides. In addition cement-based paints, designed for below-ground application, are used to keep damp basements dry. Since they are chemically related to masonry, they form a strong bond on application which heightens their resistance to hydrostatic pressure.

Silicone coatings, clear or unpigmented, are used often over brick because of their high water and alkali resistance. They stop efflorescence—accumulation of chalky white substance on brickwork. The silicones are also used for specialized jobs such as exhaust piping, bakery pans, boiler and oven protection where their heat resistance is sufficient to outweight the relatively high cost.

New Techniques

Techniques are important too. Better-quality brushes and other materials now are available for applying coatings, paint manufacturers are giving close attention to showing consumers most effective uses for products and paints are being developed which solve painting problems themselves — doing their own priming, for example.

A major and recent development has been introduction of new automobile enamels by several manufacturers. Du Pont of Canada has started production in its new Ajax, Ont., plant of Dulux 100, a new synthetic enamel which is tough, colorfast and heat hesistant.

Tests are reported to have established that the finish comes out of the baking oven as hard as conventional enamels get after several months' ageing and does not need waxing on a car for at least 18 months at a time. Since it can resist 275 deg. temperatures for up to three hours without much color loss, it is well suited to current two-tone car styling which requires two successive baking operations.

Canadian Industries Ltd., has a similar enamel RL-100 also with heat and scratch resistant qualities. The company has spent some $3 million on additional production facilities at its Toronto enamels and resin works in the last year.

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Plastics Win New Friends in Building

All-Plastic "Wonder" Home No Longer Just Vague Hope

The wonder home of the future — plastic from foundations to roof — is not far away from commercial reality.

This year, next year? That depends on developments in laboratories in dozens of centres across the world, but those developments are coming through at such a pace that a major discovery any day could happen to bring it about.

What would that wonder house be like? It's very hard to say because so many people are working on different ideas and different plastic formations, and every week discoveries are made which set the scientists and chemists off at a hard gallop on still another tack.

But it will certainly be something quite different from today's conventional home. It will have more color, more daylight, more curved lines. It will have insulation and other features that are a housebuilders' dream at present. It will go up in half the time it takes to build today's home.

How much will it cost? Even the top-flight research chemists would hesitate over that one. The house could be built now but at a cost which would make a millionaire shudder. And that is just one of the big problems which the laboratories hope to overcome.

Several plastic houses in different parts of the world have already been erected on an experimental basis. At least one has been built in Canada and a number of others have gone up in other countries.

Most recent enterprise in this field — and the most exciting — is now being shaped up in California by the giant parent of Monsanto Canada Ltd. It's called the House of Tomorrow and its purpose is to demonstrate and test the use of plastics in home construction. Completion is scheduled for early next year.

Adjust for Size

It will be of novel design, based on a U-shaped molded unit 8 ft. by 16 ft. which forms part of a room's ceiling, wall and floor. In its simplest form, eight molded units or modules are hung in pairs from a 16 ft. square utility core to form four rooms, each 16 ft. by 16 ft. The core contains kitchen, laundry, heating facilities and baths.

But there are several combinations of the components. Twin cores, for instance, make possible a variety of floor plans and allow great flexibility of layout. Rooms may be added or removed to conform with the changing space needs of a family.

The design also will incorporate advanced methods of heating, ventilating, lighting, food preparations and preservation, and plumbing. The use of movable and transparent walls and partitions will make the house suitable for the more leisurely indoor-outdoor living which economists and sociologists foresee.

Says Monsanto: The house lends itself to factory production but duplicates of it may not be available commercially although many of its components or modifications may be.

The cost hasn't yet been finally established. A preliminary evaluation program will be finished this year.

But that's just one of the efforts being made by the plastics industry to invade construction fields on a large scale. Plastics were used last year to put up a house of more conventional design. This was more a promotional idea than a commercial one. The material used was Styrofoam — polystyrene foamed by expansion to make a multi-cellular material.

It is classed as a space insulation item and Dow Chemical of Canada Ltd. is now awaiting approval of its use for that purpose in house-building by Central Mortgage & Housing Corp. It is not recommended for load-bearing members though it is being tested in that role by Dow. And with cement and plaster it gains immeasurable strength. In one test, a 9 ft. long Styrofoam board, 1 ft. wide and 3 in. thick, was coated on both sides with an inch of cement. Then it was stood on end and is reported to have stood up well to a 3,000-lb. load — about equivalent to the load on the walls of a two-story building.

Cuts Heating Costs

After that test, the Styrofoam was tried out for a one-story ranch house. For the walls, boards were laid in parallel courses, joints were staggered and tightly butted and vertical seams were filled with a waterproofing compound. Wires were strung from ceiling to floor to pre-stress and compact the boards which were given a thin coat of cement stucco on the outside and a thin coat of plaster inside. That made the walls 5 in. thick.

Styrofoam shingles with a ¼ in. coating of concrete covered the roof, and for a floor, marble tiles were put over the Styrofoam base.

This is the report on the job: By present-day standards the house is large — 3,200 sq. ft. including 400 sq. ft. of garage space. It has a large living room, a dining room, den, four bedrooms and three baths. The distributor of the material built it and he states: "It cost about $30,000 to build. A similar house, built with more conventional materials, would cost at least $35,000."

Things which the builder stated eased the cost included the convenient handling of the material. A 9-ft. board weighs only 4½ lb. and it can be cut with a saw or a knife. That, however, can be a tricky operation because, until strengthened with cement and plaster coats, too much pressure will put it out of shape. Another advantage — as an insulator, the material is expected to cut costs of air-conditioning and heating.

The house was an experiment and not one which Dow sponsored. One writer calls it "one of a number of plastic straws-in-the-wind."

Styrofoam has its biggest market in the cooler-freezer field. It is not as yet made in Canada but the Dow parent in the U. S. has been making it there for 17 years.

Dow sees the material on the verge of breaking into the housing field for insulation purposes in a big way here in Canada. The planks would be fastened to the inside of walls with adhesive and plastered. Makers claim that besides its insulation properties, it is a cheaper plaster base than some other standard forms.

It's expected that its manufacture in Canada must come soon. Demand for it is growing. Until recent months, demand was always in excess of supply but now it's reported to be more easily available.

For Arctic Cold

Then there's another plastic product which, though enjoying its big market just now in refrigeration, could find many uses in the building field, especially as the development of the Far North proceeds.

Robinson Collo Canada Ltd.'s Aer-o-buoy, a mono-cellular vinyl is not a big seller in the construction field but has been used on several large defense buildings in the North, though not as a commercial venture.

One such job was at Valcartier, P.Q. where testing of Arctic equipment is carried out. It is basically a low-temperature insulation but other qualities, notably buoyancy, are claimed for it, and it is used to make a complete line of safety equipment.

The same company has just started manufacturing eurathene foam — a cushioning material with a variety of end applications among which, it's stated, an important one will be in commercial construction. It is claimed to be an excellent acoustical material, and can be made in a variety of colors, in blocks or sheets, flexible or rigid, and does not need facing.

And another plastic newcomer to the construction field where it is finding increasing use is polyethylene film. It is gaining ground as a permanent vapor barrier against moisture penetration, as a protection on the job against bad weather and for storage facilities, and its appearance in end product as pipe is opening up another huge potential field in construction.

The raw material is polythene resin which at present in Canada is only manufactured at the CIL plant at Edmonton. But other large plant developments for its production in this country are expected shortly. Within a year or so, it's reported, Union Carbide will be making it at Montreal and there's also a report that Dow Chemical will be producing it here shortly afterward. Considerable quantities are imported.

And the interest of other major chemical companies in the field is intense. A major step forward for polythene film was the success with which it stood up to tests carried out by CMHC for Du Pont of Canada and its subsequent acceptance by CMHC for use in walls and ceilings in houses under the corporation's jurisdiction.

Speeds The Job

It's not much more than a year since it was introduced to use in the construction industry. It came in as a vapor barrier — laid on a leveled surface, preferably sandy, and the foundation concrete poured directly on to it. But since then, it has found its way into a variety of other uses.

It serves as temporary windows, as protection for equipment and even as a complete temporary building under which construction can proceed in bad weather.

The light-weight plastic that once only served as bags for vegetables and other products and still finds an immense market there, has saved many construction dollars for builders and helped speed the job on many occasions.

Aid For Stockpiling

This application may be further extended this winter. Some contractors, planning to build homes the following spring, may use the film to enable them to stockpile materials over the winter, when the hard ground permits easy trucking. One reason why housing progress was held up earlier this year was because the Spring rains made the ground so soft that it was impossible for trucks to get into many of the sites.

Polythene film is also finding increased acceptance in cement curing. In London and St. Thomas, Ont., contractors have been using the film on newly-poured sidewalks. By covering the new cement with film, no extra wetting is required. The film locks the moisture in, permits an even drying, and speeds the process. Afterwards, it can be stripped off and used again.

In the near future, the film probably will reach into additional new sections of the construction industry. It is now being put to use as scaffolding weather screens, temporary partitions, painters' drop sheets, bag liners for lime and cement, fixture covers and general utility tarpaulins.

It has been estimated that total consumption of polythene resin in Canada last year was around 20 million lb. of which perhaps half or a little more was made in this country. It is already taking a full share of the 14% of all plastics produced which is reckoned as the proportion going into the construction industry.

Tiles And Panels

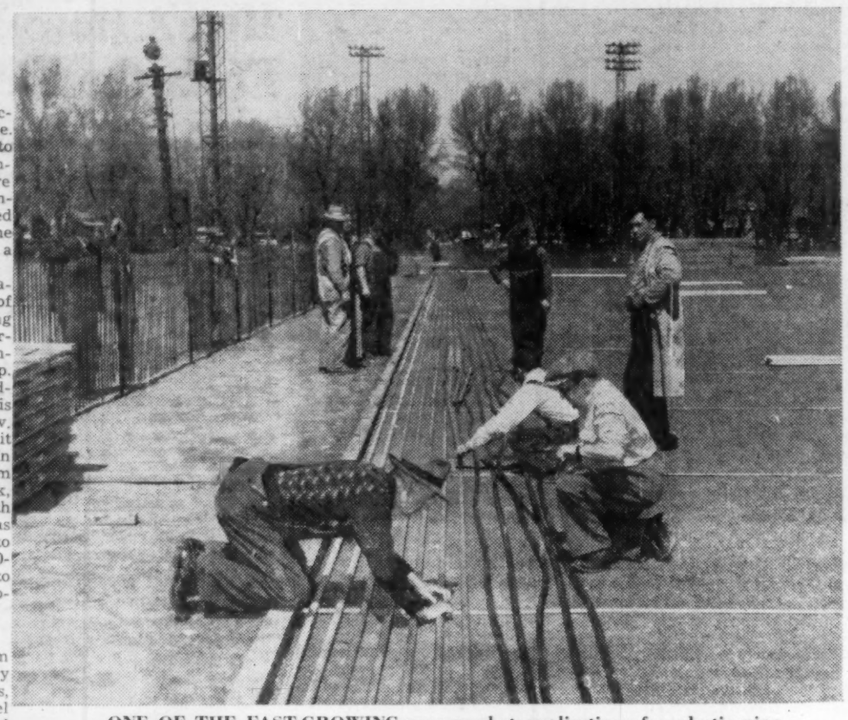
The Bakelite Co., a division of Union Carbide Canada Ltd., Belleville, Ont. sees the construction industry as a natural field for further penetration by the plastics industry. "It's likely that plastics will cause a revolution in house building techniques in the foreseeable future," the company states.

House building offers a marked example of the progress which plastics have made at the expense of some of the conventional materials.

Now, they are commonly used for wall coverings, floor tiles, counter tops, screening, plastic panels for interior partitions, and skylights. Recent developments have brought their examination for use in wall construction in the form of sandwich walls, load-bearing panels, and plastic-masonry panels, giving a range of color and design that other materials find hard to match. For the future, plastic products are expected to be used for prefabricated roofs and floors and for structural members.

A new product believed to have a large potential market is acoustical ceiling tile made of "Bakelite" phenolic foam. These phenolic tiles are expected to be competitive in price with conventional phenolic tiles made of wood fibres and are claimed to have equally good acoustical properties. Advantages claimed for them: lighter in weight, unaffected by moisture. The tiles are installed by adhesives.

To meet increasing demand for phenolic resins, Bakelite's plant at Belleville, Ont. is being increased in capacity by some 60%. One result of this expansion program, scheduled for completion by early next year, will be that high temperature resins for the paint and varnish industry will now be made in Canada for the first time. Bakelite will then be manufacturing in Belleville a complete range of phenolic resins.



ONE OF THE FAST-GROWING new market applications for plastic pipe is in carrying the brine freezing solutions for artificial rinks. Polyethylene-type plastic is used exclusively in this application because of its excellent corrosion resistance and top performance under low temperature conditions. Some 4.3 million lb. of polyethylene resin went into plastics pipe production last year in Canada, including pipe for movement of water on farms, at summer cottages, etc. This application will expand a further 35% in the current year, pipe makers forecast.

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Fast-Growing Markets For New Plastic Pipe

Pipe production is one of the fastest growing markets for plastics today — particularly polyethylene.

But because more and more extruders are rushing into the field the business has become very competitive. Authorities are now pushing for some measures of standard controls to regulate production.

Polyethylene is still accounting for the big share of the pipe market. Producers claim some 4.7 million lbs. of polyethylene resins went into plastic pipe production last year. They forecast that this will rise to 6.3 million lbs. in the current year, a 30% rise.

Biggest market for the polyethylene pipe in this country—and it appears likely to continue—has been for cold-water lines, especially for farm irrigation and watering systems. Summer cottages, too, are a major market outlet, for plastic water lines.

Some 85% of all plastic pipe made in Canada is being extruded out of polyethylene resin. About 90% of total sales are going to farmers. But applications are increasing rapidly. For instance a fast-moving line this year is polyethylene plastic lawn sprinkler systems. Sprinkler heads spaced at intervals across the lawn, and fed off plastic piping installed just below ground level, provide evep sprinkling of the entire lawn at the turn of the tap.

Other fast-expanding uses for polyethylene piping are in skating rinks, dairy systems, construction jobs, mines, and general industry. A new and growing use for the pipe is in municipal water systems. A number of municipalities have ordered the plastic piping recently for use as street water mains.

The research department of the Ontario Hydro - Electric Commission has been carrying on extensive study into the whole pipe field to see if any of the plastic pipes will meet its rather exacting standards. They want a pipe that will carry water, oil, compressed gases and, for uses in underground electrical conduits, one that has excellent corrosion resistance to soil chemicals.

The most promising materials look like rigid polyvinyl chloride and a pipe made out of styrene co-polymer. Hydro research officials anticipate a definite purchase move into this field within the next year at least. This could provide a huge new market potential for plastic piping in this country.

Today plastic pipe is being successfully used for :

—Transmission of water in portable water supply systems.
—For irrigation water.
—For cooling brine in artificial skating rinks.
—Movement of natural gas.
—Movement of oil.
—Movement of salt water.
—Mine drainage.
—Movement of chemicals and beverages.

Although the market has become very competitive outlook is for overall sales volume to keep climbing for another four or five years at least.

One of the first plastic pipe installations in Western Canada's oilfields has come through the recent severe winter with flying colors.

The installation of butyrate plastic pipe was made for Imperial Oil Co. in the Devon Alberta oil field. Selected because of its resistance to corrosion from brine solutions and soil, the installation was 3,000 ft. long and was laid from the battery to a salt water injection well. The pipe eliminated the need for truck haulage to storage tanks.

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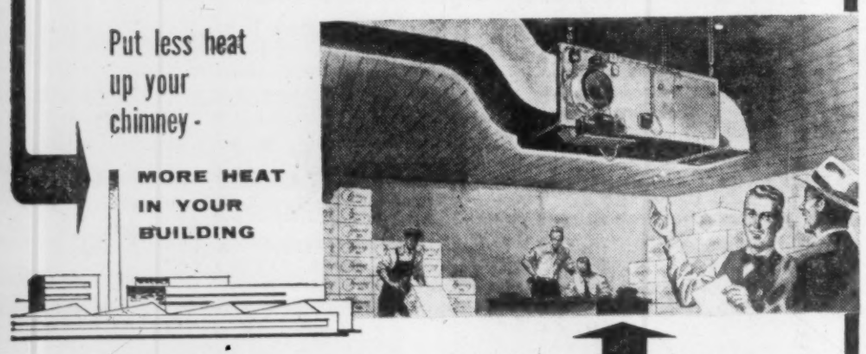

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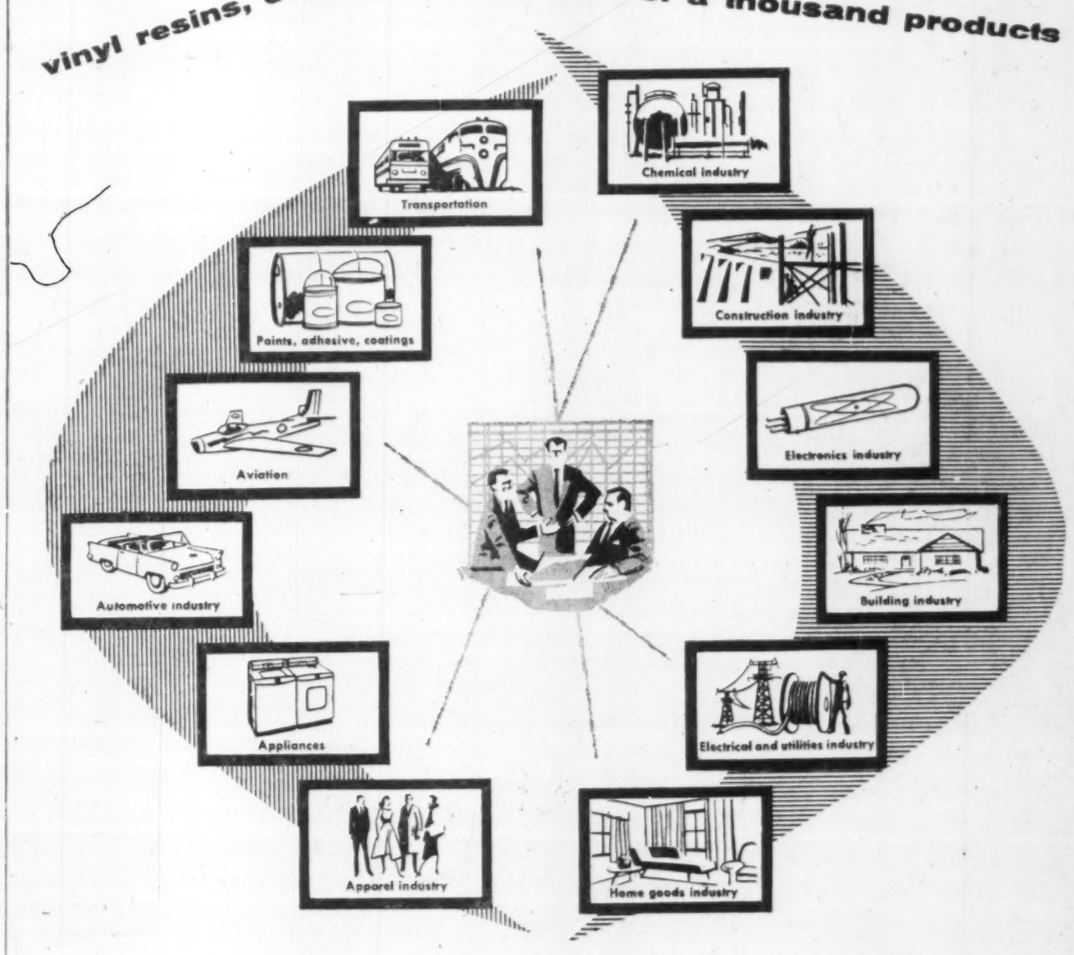

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Chemistry Leads in Fight Against Weeds, Insects and Bugs

Help Farm, Home and Industry With Many New Dopes, Drugs

Sales of the dopes and drugs that are used to fight pests in Canada now top $20 millions, four times their 1937 value.

This fast-growing section of the chemical industry has potential customers in every home and garden, farm and factory across Canada — wherever insects, bugs, weeds do damage. The annual loss totals $1.25 billion.

Will the market for pest chemicals get bigger? What sections are growing? This detailed report will tell you.

Take a nemotode. It's a worm-like parasite too small to be seen with the naked eye. A few years ago it was ignored as relatively harmless. Now nemotodes are a main target of the chemical companies who blame them for some of the damage in nearly every domestic plant.

The root-knot nemotode eats into 1,700 different plants. The golden nemotode can destroy 90% of a potato crop. Last year, say the scientists, farmers and gardeners in North America lost one-tenth of all they grew because of nemotodes.

Why is this startling information not more widely known? Here are two reasons:

- Pest control, as a science, started its rapid growth in 1947.
- Customers have not yet realized how much it can do for them.

And these reasons add up to this conclusion: the business must have a big future. U. S. forecasters say it could become a $1 billion a year business by 1960.

Here are the DBS figures which show how pest control products have been selling in Canada: 1937, $5.5 million; 1947, $7.2m.; 1948, $10.3m.; 1949, $12.1 m.; 1950, $13.5m.; 1951, $15.8m.; 1952, $16.2m.; 1953, $17.2m.; 1954, $19.4m.

Figures for 1954 are the latest available and this is what happened to sales of different groups of pesticides between 1953 and 1954:

—Livestock treatments went up 73.9%;

—agricultural dusts and sprays jumped 16.9%;

—household and industrial insecticides jumped 11.6%;

—rodenticides went up 10.4%;

—herbicides went down 9.2%.

More than 3,000 pest control products have been registered for sale in Canada and another 10% have been rejected as unsuitable by the Plant Products Division of the Department of Agriculture. This department, administering the Pest Control Products Act, checks the human and animal health hazards of pesticides.

Farmers are Cautious

While more and more products have been pushed on the market, the biggest consumers, the farmers, have not rushed to obtain them. The DBS figures, showing an upward trend, include domestic and industrial pesticide sales. But it was the vast agricultural market that was expected to expand, and it has not yet done so. Herbicide sales went down in 1954.

Dr. A. W. A. Brown, as entomologist for the Entomology Division of the Department of Agriculture, has made an exhaustive survey of the agricultural market and here are some of his findings published early this year.

For an annual production of approximately $4 billion, Canadian farmers apply agricultural chemicals to the value of $12 million. This has remained almost constant for the last four years.

In comparison, U. S. farmers, for a gross annual farm product of $40 billion, pay about $240 million for their herbicides, insecticides and fungicides.

In Canada, it is estimated, of the 59 million acres planted to crops, only 12.3 million acres, or 20.8%, are treated annually with chemicals. The annual loss of crops caused by agricultural pests approaches $750 million. U. S. annual crop loss is given by the U. S. Dept. of Agriculture as $7.5 billion.

How are the losses caused in Canada? Weeds cost $330 million, insects cost $212m. and plant diseases cost $200m.

In addition, the food bill of rodents in Canada costs $300 million; insects cause losses to livestock of $100 million a year and to forest trees of 300 million cubic feet.

All this adds up to an annual loss from pests of about $1.25 billion. Weed infestation alone, say scientists at Naugatuck Chemicals, costs the average prairie farmer $1,028 each year. But recent experience suggests that even these loss estimates are low; improved insecticides and control methods, for example, are producing greatly increased yields in areas once considered free from insect damage.

How it Saves Money

What return is there on money spent on insect control? In Alberta, in 1950, a crop worth $6 million was saved by treating 296,000 acres for grass hoppers at a cost of $50,000. The return: 120 to 1.

In Saskatchewan, in 1949, $1.2 million was spent on grasshoppers to save a $50 million crop. The return: 41 to 1.

Seed treatments against wireworms in Alberta in 1953 yielded a return of 10 to 1. Area treatment for wireworm is estimated to yield 42 to 1. In the U. S., it is estimated that $52 comes back on every dollar spent on insect control.

The use of pesticides produces greater proportional returns than any other investment the farmer can make, says analysts at Naugatuck. A dollar spent on herbicides will produce $5 to $10 in increased yields or better quality produce. Insecticides give a 20:1 return, while fungicides commonly produce extra value 50 times their cost. A weighted average for all pesticide products would probably show $20 extra income for each dollar expenditure.

Despite these benefits, manufacturers cannot rely on the Canadian farmer to make regular use of pesticides. In the provinces of Canada, the same crops receive different treatment. Here is a digest of Dr. Brown's survey:

Fruit. The 173,000 acres of fruit trees in Canada are almost all treated with chemicals. Coverage in Ontario is nearly 100%, B.C. over 95%, Quebec 90% and Nova Scotia 80%. In Ontario and British Columbia, malathion is used in the attempt to get complete control. In Nova Scotia, the trend is to use potent and residual insecticides sparingly and encourage the use of ryania.

Potatoes. About 250,000 acres of the 296,000 acres in Canada are treated. Ontario and B.C. give complete treatment, Quebec gives 75% treatment but in Nova Scotia and Manitoba only 25% of the farm acreage is sprayed.

Tobacco. All the 91,000 acres in Ontario are treated for cutworms and wireworms by means of poison baits. Some 70,000 acres are sprayed or dusted against hornworms. Quebec treats half of its 9,000 acres.

Sweet Corn. Of the 39,000 acres in Canada, 25,000 acres treated in Ontario and 3,000 in Quebec.

Tomatoes. Reports suggest that 80% of the 40,000 acres are treated.

Peas. Of the 38,000 acres of peas, some 20,000 are treated. All the 6,000 acres of canning peas in Ontario receive treatment and 90% of the 4,000 acres in B.C.

Cabbage and cauliflower. All 9,000 acres treated for caterpillars and root maggots.

Beans. Some 2,000 out of 9,000 acres treated.

Sugar beets. About 10,000 of the 90,000 acres are treated.

Asparagus. Of the 2,700 acres, 2,000 are treated for beetles.

These figures show that some 660,000 acres of crops are treated with insecticides and fungicides, made up mainly of 200,000 acres of tree fruits and small fruits and 250,000 acres of potatoes.

The rest of the 12.3 million acres treated in 1954 are covered by herbicides, totaling 11,530,000 acres, of which 11,056,000 are prairie grain fields. About 30% of the grain acreage in the Prairie provinces were treated in 1954.

Last year, the acreage sprayed with herbicides in Western Canada increased to a record 14 million, representing 34.8% of the Western Canada total. Nine million acres of wheat, 43.2% of the total, were sprayed, also 4.5 million acres of oats and barley, or 25.8% of the total, and 500,000 acres of flax, or 25.5%, were sprayed.

How are pest control chemicals applied? While mostly it is done by the grower, aircraft and trains are also used.

Canadian National Railways will be using eight special spray trains this year for weed and brush spraying. Weeds are sprayed for eight feet on either side of the track at a rate of 40 miles a day. Some 11,250 miles will be covered, at a cost exceeding $750,000.

Brush spraying is done over a greater width at a rate of 15 to 20 miles a day. CNR plan to spray 4,300 miles.

According to Dr. Brown's survey, 62 aircraft are in use for Canadian aerial pest control. There are 40 licensed operators. It is estimated that 70% of the 92,000 acres of tobacco in Ontario is treated from the air. Some 1.4 million acres of woodland were treated for spruce budworm in 1954. Altogether cropland accounted for only 483,000 acres of aerial treatment. The aerial application is mainly by spraying.

While Dr. Brown's survey clearly shows the Canadian attitude to agricultural pesticides, it does not show the sudden year-by-year fluctuations caused by changes in weather and the arrival of new products and new pests on the scene.

Last year the use of Captan, hailed as a "miracle fungicide" in 1954, accelerated a trend to organic fungicides. Used as a preventive spray in the fruit orchard, Captan gained considerable ground over traditional copper and sulphur compounds.

Estimates on the quantity of Captan used indicate that as much as 50% of the apples, peaches and sweet cherries grown in eastern Canada were treated with it during the season.

Insects build resistance

While DDT continued to be widely used last season, some areas reported insects building up resistance to it.

In the tobacco areas of southwestern Ontario, around Norfolk County, difficulty was experienced in controlling the Southern Tobacco Hornworm. The new insecticide, Endrin, was introduced and its success suggests sales will soar.

In Quebec, DDT resistance was reported in Colorado potato beetles. Heptachlor, which had not been widely used, was found to give good control.

In Western Canada, where the grasshopper threat is carefully watched, an aphid outbreak occurred last year. Manitoba's barley crop was seriously threatened until three firms, Chipman Chemicals, Winnipeg, Canadian Industries, Montreal, and the North American Cyanamid Co., flew in several tons of Malathion from New York.

New Products

What is the outlook for this coming year? Two new products are expected to catch on quickly. These are:

Nemagon. Shell Chemical Corp's new soil fumigant has been developed to control nemotodes. It can be sprayed, incorporated or broadcast.

Diazinon. Produced by Geigy Agricultural Chemicals of New York and distributed in Canada by Chipman Chemicals Ltd., this new insecticide is to be marketed this year as an emulsifiable concentrate for control of flies. Geigy Diazinon 25E is claimed to give fly control for four to six weeks after spraying.

The late spring in Eastern Canada is expected to cut into sales of agricultural chemicals this season. Fruit areas in the Niagara Peninsula have been reduced by late frosts. Grapes and sweet cherries have been severely damaged and 30% of the berries killed. Peaches and sour cherries experienced little damage.

What's Ahead for 1956

W. C. Shipley, development and technical service department of Chipman Chemicals, has made these predictions for 1956:

Fungicides. Sales in 1956 may be down due to frost damaged fruit acreage. But the swing to organic fungicides is almost certain to continue in view of the increase in copper prices. Copper fungicides have been selling for more than 25% over the 1955 price, so sales of organic fungicides may increase 35%. Nabam type materials may be used on potatoes to a greater extent.

Insecticides. It is still too early for trends to be evident but some sales will go up due to increased tobacco acreage to 120,000 this year.

Herbicides. Cool, wet weather during April and May in Eastern Canada has increased demand for weed killers. Weeds made a good start while weather held back planting.

Treatment By Provinces

Here are the province-by-province acreages treated with pest control chemicals in 1954:

Province	Total Planted	Total Treated
Maritimes	1,545,000	188,195
Quebec	5,609,000	149,990
Ontario	8,693,000	721,850
Manitoba	6,907,000	1,095,000
Saskatchewan	22,324,000	7,000,000
Alberta	13,231,000	2,981,000
British Columbia	615,000	192,200
Total	58,924,000	12,328,235

FIRE HAZARD is checked by thousands of gallons of weed killer sprayed from Canadian National Railways' special trains every year. This summer 2,300 miles will be covered at a rate of 40 miles a day.

Here's How You Can Tell Insecticide From the Fungicide or Herbicides

Here is a simple-to-follow guide to the range of pesticides on the market today. They are divided into three groups, herbicides, or weed killers, insecticides and fungicides.

Herbicides: The herbicides most widely used are called "selective" — they kill broad-leaved weeds while not harming desirable plants. Leading member of this group is 2,4-D, manufactured in Canada by Naugatuck, and used on more than 14 million acres of grain in the Prairies last year.

A relative newcomer to Canada from Europe, MCP, is gaining acceptance for weed control in flax and oats where its additional safety factor is frequently worth the extra cost.

Another member of the "selective" family, 2,4,5-T, is used mixed with 2,4-D for brush eradication. All these materials are closely related chemically.

A second group of herbicides is the specialized pre-emergent type designed to eliminate broad-leaved weeds and grass from crops which are not tolerant to the selectives. These are applied to the soil after the crop has been planted and act to kill weeds as they germinate.

Alanap is typical of the wide range of these materials, being effective with cucumbers, melons, cantaloups, asparagus, soy bean and nursery plantings. The dinitros are mainly used on peas and beans, while IPC and CIPC are of greatest value with onions and asparagus.

The third group of herbicides is the soil sterilants, such as sodium chlorate, CMU, borate chlorate, and Dalapon. They act to kill all vegetation, and are of main interest in maintaining railway ballast beds or in treating fields with heavy weed infestations where the field can be out of use for three or four years.

Insecticides: The broad spectrum insecticides include the chlorinated hydrocarbons, DDT and its close chemical relatives methoxychlor and BHC, and the organic phosphates, Parathion and Malathion. These are general-purpose insecticides of the widest use. The organic phosphates are the most active, with North American Cyanamid's Malathion taking over from Parathion because of its lower toxicity.

Products such as chlordane, heptachlor, and Shell Oil Co.'s Aldrin, Dieldrin, and Endrin, are designed for the control of soil insects primarily. They are effective against locusts, grasshoppers, wireworms, and cutworms.

There are other insecticides meant primarily for the control of a few insect varieties. Aramite, for example, was developed to control mites which became a major economic nuisance when DDT killed their natural predators, the codling moth. Aramite, while notably effective against mites, does not harm larger insects such as the codling moth or honey bees.

Fungicides: The carbamate group, Ferbam, Zineb, Ziram, Nabam, and Maneb, for fruit and vegetable fungus disease control are among these. The carbomates are also rubber chemicals. A new more potent member of this group, Thioneb, is a recent Naugatuck development.

There are also products such as Thiram and Spergon, used as a seed treatment for peas, beans, and corn, and Phygon, Glyodin, and Captan, used mainly to protect orchard crops against fungus infections.

The mercurials are the most effective treatment for cereal seed and for orchards as an eradicant where infection has been established less than 96 hours, but they possess the disadvantage of being comparatively toxic.

Developments: In the pesticide field antibiotics are being used to control plant diseases, and are already being used to maintain farm animal production. Still in the experimental stage are systemic compounds, materials which get into the plant's sap system and kill insects or developing diseases when the plant is first exposed.

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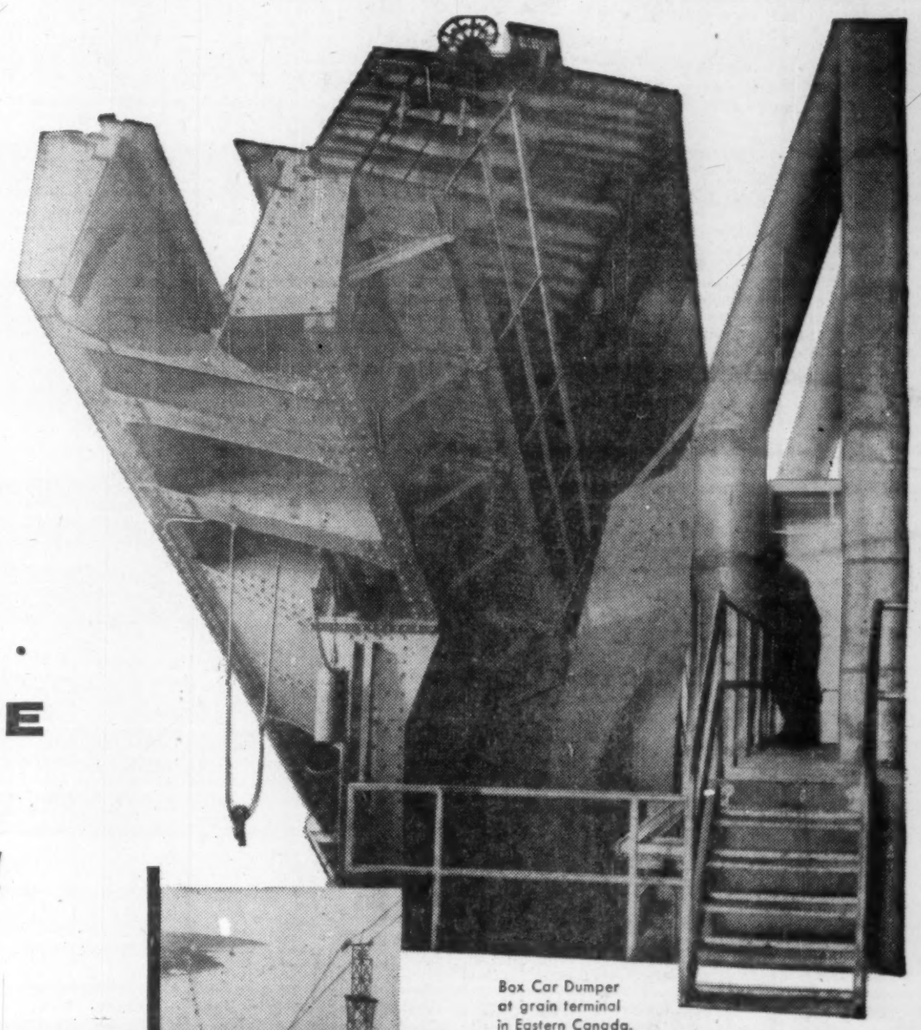
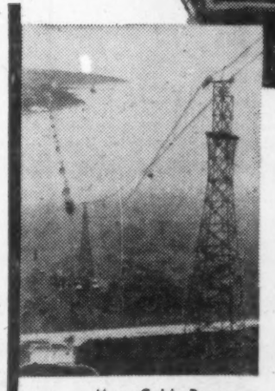
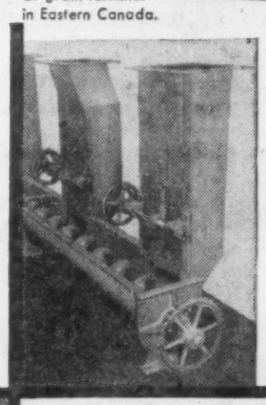
...and these photographs serve to show the wide background of experience in all phases of materials handling offered by United Steel Corporation.



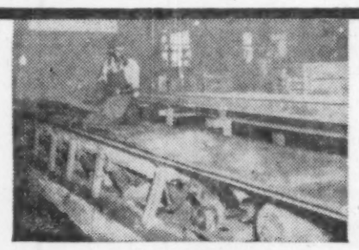
Box Car Dumper at grain terminal in Eastern Canada.



Mono-Cable Ropeway carrying ore to shiploading system.



Screw conveyors transferring grain from bins to process in large Ontario milling company.



Carrier Natural Frequency Conveyor handling hot sand and castings in foundry.

Conveyor belt and bucket elevator teamed for low cost coal handling at an Ontario rubber plant.

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Health Chemicals Chalking Up Records

Thirty New Drugs Monthly Arrive On Canadian Market

With thousands of dollars and countless manhours of highly trained research personnel now being devoted annually to the probe of pharmaceutical chemistry, Canada's role in this booming segment of the chemical industry is becoming of ever-increasing importance.

Practically without exception, pharmaceutical houses in this country are annually attaining new sales records. Many are turning to greater primary production of drugs and their components. The big U. S. firms have established branches in Canada. Some Canadian firms are broadening their scope by invading the United States market.

Future of the pharmaceutical industry itself appears to be without limit. It stands today on the threshold of far greater achievements.

In the last 15 years probably as many new drugs and preparations were made available to the medical profession as were previously known in the history of man. These drugs have increased life expectancy, cured, checked or relieved various illnesses and increased the quantity and quality of food supply.

Pharmaceutical chemistry got its real start in World War II. Since then progress has been outstanding.

Not only are new drugs being developed almost daily but existing preparations are being improved, prepared more cheaply and in new combinations.

Take for example cortisone, whose powerful antiarthritic properties were discovered in 1948. At that time the world's supply of the drug was 1/18 of an ounce.

Formerly manufactured from a constituent of cattle bile, it took 40 head of cattle and 37 chemical steps to produce enough of the drug for a single day's treatment.

Today the manufacturing process is still complicated but chemists have learned more convenient methods to make this drug. Cortisone's more powerful cousins, hydrocortisone and prednisone, are now being produced much more economically.

A further recent refinement has been combination of prednisone and the common aspirin. The antiarthritic property of these two drugs in combination is greater than either by itself. The result has been greatly reduced cost of treatment for patients who are able to use the combination.

Prednisone, a little over a year ago, sold for about 40c a tablet with cost of a typical treatment running about $2.50 per day. The combination, which is just as effective in many cases, costs about 8c a tablet, reducing the cost of treatment to about 50c a day. This combination drug was recently introduced on the Canadian market by Charles E. Frosst & Co., under the name of Colisyl-H.

Thirty Drugs A Month

One large drug wholesaler here estimates that between 10 and 30 new pharmaceutical preparations come onto the Canadian market every month. This represents only the cream of the development crop—that fraction which has passed exhaustive tests and has been approved by both the medical profession and government health agencies. The remainder are either further developed or set aside against the day when new scientific advances will make reopening of investigation worthwhile.

In the past year on the pharmaceutical scene, major advances have been scored in three fields:

—Development of drugs for treatment of mental illness.

—Improvement of drugs for treatment of heart ailments and conditions.

—Accelerated research into anti-cancer chemicals.

Achievements in the mental field have far over shadowed the other advances.

A new group of drugs—termed "tranquilizers"—not an overly accurate description as they have no hypnotic effect—have not only provided psychologists and psychiatrists with valuable tools. These preparations have, in themselves, been used for treatments.

The drugs include such preparations as lagactil, cloropromazine and reserpine. One Canadian manufacturer will, within the next few weeks, bring onto the market a new type of low-power tranquilizer designed for day-time use to relieve mild forms of stress and tension.

Much about the exact workings of these drugs is not yet known. They apparently have an effect on various nerve centres of the brain. Considerable research is being carried out both to learn more about these effects and to develop more powerful drugs.

In the field of heart ailments, several more powerful drugs have been developed out of the one previously in use. These new preparations, in addition to being more potent are less toxic and have fewer undesirable side effects.

Cancer Research

The pharmaceutical industry and researchers today feel they are near the development of anti-cancer chemicals. Intensive research is being carried out on a number of chemicals which are known to possess anti-tumor growth properties. It will be a number of years, however, before such drugs will be available. So far no preparation has emerged from the research that looks promising for the immediate or even near future.

Of growing importance in the field of agriculture are pharmaceutical products for the treatment of livestock and the increasing number of nutrition products—feed additives which promote greater, faster growth without increasing feed consumption.

Synthetic urea, for example, added to feed enables cattle to digest roughages such as corn and stalks, wheat straw and timothy hay previously considered of little value. Canadian sales of urea type nutrition products in 1953 totaled about 1,300 tons. In 1954 sales rose to about 2,300 tons and the industry expects that sales in 1955 will have topped the 3,000-ton mark.

Du Pont of Canada, for example, markets such an additive under the name of Two-Sixty-Two. It contains 42% nitrogen from synthetic urea and one pound is equivalent to six pounds of 44% oil meal.

Experiments now being conducted indicate that addition of lysine, one of the amino acids, to high-energy feedlot rations for hogs may help the animals to gain faster and reach market size on less feed.

Synthetic methionine, another of the amino acids, added to poultry feed enables the birds to gain weight on less food.

Various new preparations have been developed for treatment of animal diseases. Some types of feed now contain small quantities of antibiotics to promote general health of livestock.

• • •

Here is the record of a few of the major pharmaceutical companies:

Charles E. Frosst & Co.

While not a prime manufacturer, Charles E. Frosst & Co. processes drugs into dosage form. Company is well known for analgesic, vitamin, hormone, antirheumatic, mineral supplement, and antibiotic preparations.

It operates the only laboratory in Canada for the preparation of radioactive chemicals for medicinal use. These find their way into cancer, thyroid and related treatments, as medical research.

The company was founded in 1899 in Montreal and initially had but a 28x80 ft. manufacturing site. Today the firm is located in a modern four-story building containing upwards of 100,000 square feet of floor space. An extensive addition to the plant is currently under way.

Branch offices are located in Toronto and Calgary, the latter being equipped with warehouse facilities. A new warehouse is scheduled to be opened in Toronto this fall.

Frosst sells its preparations on the world market, with extensive sales being made in South America and the Middle East.

The company is among the pioneers in development of synthetic hormones, "combination" preparations such as cortisone—aspirin and sulfonamide—antibiotic. It is also closely connected with "delayed action" preparations whereby absorption of a single dosage is spread over a considerable length of time.

The company engages in extensive research both in its own laboratories as well as in cooperation with various Canadian universities.

Frank W. Horner

A Canadian-owned pharmaceutical house, Frank W. Horner in 1955 experienced record sales, up by 9% over the previous year. The company evolves, manufactures and distributes prescription drugs for use by physicians in Canada, B. W. I., Central and South America, India, Pakistan and a number of other countries.

During the past year the company introduced, with a high degree of success, Parenzymol, an anti-inflammatory agent for injectible use. Derived from the enzyme trypsin, it is used in treatment of acute inflammation associated with a number of illnesses.

Considerable research is being conducted by the company in the field of anti-cancer chemicals. One agent in particular is being tested for possible use in treatment of cancer of the prostate gland.

Company's research staff in Montreal includes seven scientists and eight technicians. The firm's plant and research laboratories are located in the Town of Mount Royal.

Ayerst, McKenna & Harrison Ltd.

The Canadian pharmaceutical firm of Ayerst, McKenna & Harrison Ltd. was established in Montreal in 1925 and nearly 10 years later "invaded" the United States market, establishing a plant at Rousses Pt., N.Y.

All research for both Canada and the United States is done at the company's Montreal plant where research laboratories with a personnel of 65 are located.

The company is a basic producer of steroid hormones, a number of vitamin preparations and penicillin as well as a number of animal medications and other products.

Pfizer Canada

The Canadian division of Pfizer, world-wide pharmaceutical and chemical organization, shortly will introduce on the Canadian market a steroid intravenous anaesthetic, a new preparation pioneered by the company.

Tests so far indicate that the anaesthetic lends itself to use in connection with surgery of the upper chest, throat, and head. It has a relaxing effect as well as a high safety factor.

The anaesthetic properties of steroids were first noted by Dr. Hans Selye, University of Montreal, in 1943.

Pfizer Canada, is prime manufacturer of vitamin preparations and several other products and company processes into dosage form a large number of items including broad spectrum antibiotics, penicillin, tranquilizers, anti-nausea and antiarthritic preparations. Also marketed are animal medications, nutrition products and preparations for use in manufacture of other products.

The plant is located on an 80-acre site at Arnprior, Ont. Company has offices in Montreal and warehouse facilities in Toronto, Winnipeg, Edmonton and New Westminster, B.C.

The parent company, Chas. Pfizer & Co., was established in Brooklyn, N.Y., in 1849. Pfizer Canada Ltd. was set up in 1951.

Nordic Biochemicals Ltd.

Nordic Biochemicals, Ltd., Montreal is making plans to invade the U. S. market. A subsidiary is in the process of being formed there to market the firm's ACTH, widely used in treating arthritis, allergies, acute alcoholism and shock.

The five-year-old firm has also acquired a site in Point Clair, near Montreal where a new plant will be built.

The company expects to market shortly cortiment opthalmic, a soluble hydrocortisone for treatment of inflammation of the eyes. Eye inflamations have already been treated with suspensions of hydrocortisone. The new technique, involving use of a solution, will decrease the cost of treatments.

Nordic is currently carrying out research on growth hormone in conjunction with the University of Montreal.

The company is extracting the hormone from the pituitary gland of monkeys. When enough has been obtained, its effect on humans will be tested.

Abbott Laboratories Ltd.

The subsidiary of Abbott Laboratories Inc., Chicago, is planning a 40,000 square foot addition to its Montreal plant.

In addition it will take over new facilities, in Don Mills, Toronto, later this month.

The Montreal addition is intended to help the company expand its production of parenterials — intravenous solutions. During the year a number of new products have been placed on the market and others are currently undergoing clinical testing.

Included among the new products marketed is Tronolen, a topical anaesthetic used in treatment of poison ivy, insect bites, etc.

Merck & Co.

This firm of manufacturing chemists is among Canada's top producers of antibiotics, steroids and vitamins.

Nearly 700 persons are employed by Merck & Co. in Canada at its four locations—Montreal, Valleyfield, Que., Toronto and Vancouver. Manufacturing facilities at the Valleyfield plant recently have been increased. New buildings house improved facilities for the manufacture of streptomycin sulfate, vitamin B12, cortone, and hydrocortone.

Niacin production will commence in the fall, and milling equipment for feed supplements will move into new Valleyfield quarters during the summer. This has necessitated steps to double the present capacity of the steam plant.

Merck has made available in Canada the products of the research facilities of the parent organization, Merck & Co. Inc., Rahway, N.J. Investigation carried on in Canada is closely integrated to production problems. It is developmental research, channeled toward process improvement and the utilization of Canadian raw materials.

A recent development has been the merger of Merck with Sharp & Dohme, an established manufacturer of ethical drug preparations and a pioneer in the field of biologicals. A notable Sharp & Dohme development was the preparation of dried human blood plasma. The merger gave Sharp & Dohme the benefit of Merck's research and production skills, while Merck gained from Sharp & Dohme's know-how in the field of biologicals. The merger has just been implemented in Canada, and all Sharp & Dohme operations have been moved from Toronto to Merck's head office in Montreal.

Among new developments, a unique new antibiotic, cathomycin, was recently released in Canada by the Sharp & Dohme division. Cathomycin shows great life-saving potential. It is especially dramatic in its effectiveness against certain deadly staphylococci and other organisms which have built up resistance to all known antibiotics.

In the steroid field, Merck, Sharp & Dohme offers an unusual formulation of the newest compounds, prednisone and prednisolone. These new multiple compressed tablets codeltra and cohydeltra are specifically designed as a tablet within a tablet. This makes it possible for the first time to combine steroid therapy with an antacid, to combat the gastric distress which is often associated with steroids.

A new weapon against hypertension, inversine, tackles the nervous system which is known to have a profound effect on blood pressure. This is known to the medical profession as a "ganglionic blocking agent."

Merck & Co. has also ventured into the manufacture of radioactive isotopic and deuterated compounds. Laboratory facilities have been constructed and personnel trained to prepare compounds of this sort currently being used.

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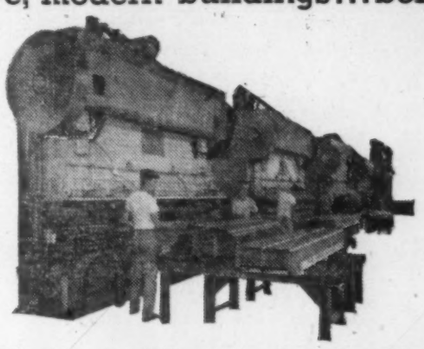

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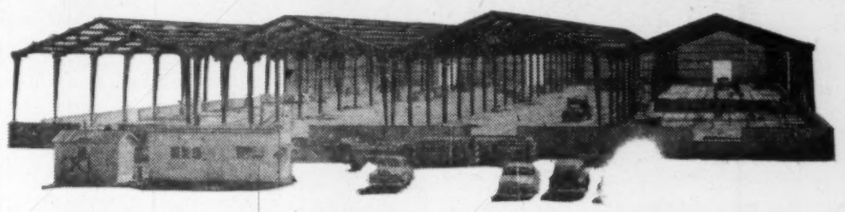

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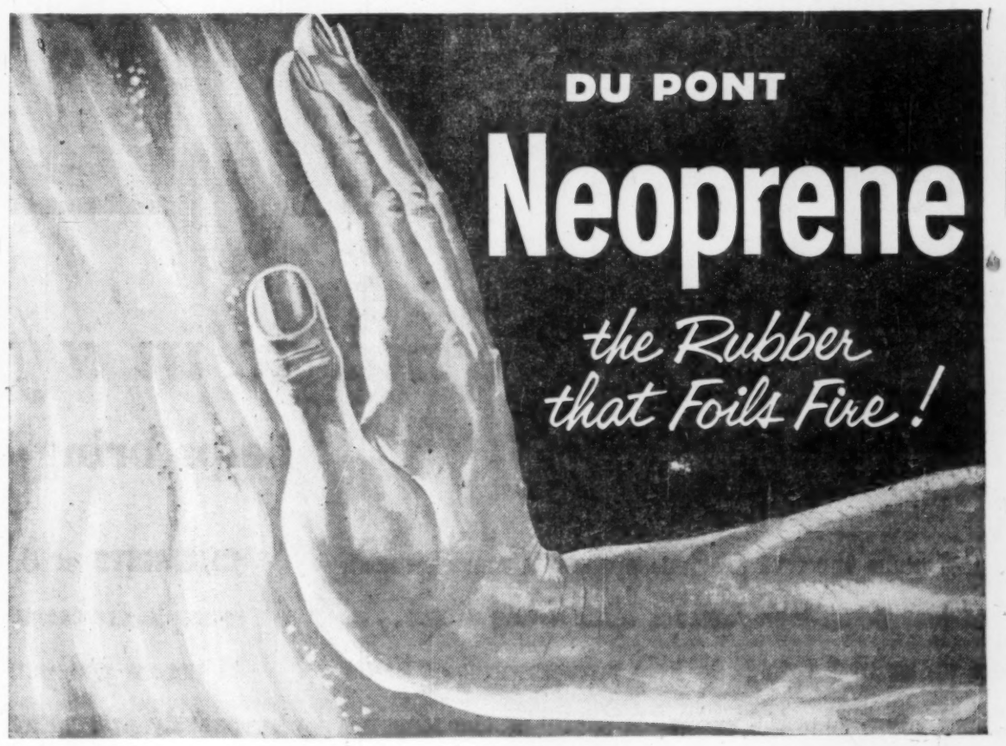

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